

4.—*On Some South African Aviculariidae (Arachnida). Families Migidae, Ctenizidae, Diptothelcae, and Dipluridae.*—By R. W. E. TUCKER, B.A., Assistant.

(With Plate IX and Thirteen Text-figures.)

## FAMILY MIGIDAE.

GEN. MOGGRIDGEA, O. P. Cambr.

The separation of *M. seticoxa*, *coegensis*, and *nigra* by Hewitt (Ann. Trans. Mus., vol. 5, No. 2, p. 92) under the heading (a<sup>1</sup>) “*Coxa II with a distinct posterobasal group of shorter and more densely crowded (often spiniform) setae inferiorly*” seems doubtful. Purcell, in his description of *M. coegensis* (Ann. S. Afr. Mus., vol. 3, pt. 4, p. 72), mentions “*Coxa II with a much smaller and scarcely distinct group (formed of 6–8 setae placed closer together than elsewhere)*”; and in the type specimen the approximation of the bristles is scarcely a distinct group. Of the other members, *nigra* has no such group, and *seticoxa* has only a very slight approximation of bristles, as in *coegensis*; it may be advisable therefore to merge the *seticoxa-coegensis* group with the *quercina-microps* group, with the posterobasal group of bristles on *Coxa III* as the distinguishing character, making the presence of a few extra bristles basally on *Coxa II* a subsidiary specific guide.

MOGGRIDGEA QUERCINA, Sim.

1903. Simon, E., Ann. Soc. Ent. Belg. vol. 47, pt. 1, p. 22.

1903. Simon, E., Hist. Nat. des Araign. vol. 2, p. 881.

1903. Purcell, W. F., Ann. S. Afr. Mus. vol. 3, pt. 4, p. 73.

1915. Hewitt, J., Ann. Transv. Mus. vol. 5, No. 2, p. 91.

An adult ♀ specimen (No. B. 1364) taken from nest on a Mahogany Umkahlá tree in Durban by H. W. Bell-Marley, September, 1915. This specimen is so closely allied to *M. quercina* that it has been referred to that species.

Apart from the size, the few differences which present themselves seem insufficient to separate it specifically from the above.

It undoubtedly comes in the same group as *quercina*; in size it more nearly approaches *M. intermedia* (Hewitt). From the descriptions, both *M. intermedia* and *M. microps* (Hewitt) seem so closely related to *M. quercina* that they may well prove to be local forms of a wide-spread tree-inhabiting species.

The nest of the above specimen consists of a roomy chamber (sufficient in size for the spider to turn in), built in a hollow of the bark, coloured to resemble the latter, and decorated with lichen, etc.; the door is similar and fairly strongly built, and has a bevelled edge, which fits well down on to the rim of the tube, which is also hard and bevelled.

*Measurements of specimens.*—Carapace 6.5 long; 5.5 wide. Length 18 mm.

#### MOGGRIDGEA PERINGUEYI, Sim.

1903. Simon, E., Ann. Soc. Ent. Belg. vol. 47, pt. 1, p. 23.

1903. Simon, E., Hist. Nat. des Araign. vol. 2, pp. 878 and 881.

1903. Purcell, W. F., Ann. S. Afr. Mus. vol. 3, pt. 4, p. 73.

1915. Hewitt, J., Ann. Transv. Mus. vol. 5, pt. 2, 92.

*Specimens.*—♂ (No. 8328) Houwhoek, Cal. Div. (W. F. Purcell, 8/1900). ♀ (B779) Houwhoek. (R. M. Lightfoot, 7/10).

♂. *Colour.*—Carapace very dark mahogany brown; almost black in appearance; abdomen black; spinners, lung operculae, and genital plate lighter brown; sternum and coxae pale brown, coxae of pedipalps reddish-brown. Legs with dark femora, but lighter from patellae onwards.

*Carapace.*—Equal in length to tibia and  $\frac{5}{6}$  of metatarsus of 1st leg, and to tibia and  $\frac{4}{5}$  metatarsus of 4th leg; densely granular. Fovea deep and strongly recurved.

*Eyes.*—Front row lightly recurved; medians nearly their own diameter apart, laterals broadly oval, much larger than medians, and more than their own long diameter from latter and from anterior margin of carapace. Posterior row recurved; much narrower than anterior row, and with the eyes small and flat; medians and laterals subequal, well separated, and situated opposite the gap between anterior medians and anterior laterals.

*Labium* and coxae of pedipalps and legs muticous.

*Chelicerae* with 4 teeth down each side of groove. Posterior sternal sigilla long, broad oval, and well separated from margin; situated between 2nd and 3rd coxae.

*Legs.*—Tarsi short, swollen, scopulated, and unspined. Metatarsus I with 6 strong spines down each side surface, and with a few other

smaller ones. Metatarsus II similar, but with the spines weaker and more irregular; both are unscopulated, but metatarsus II has a few scattered hairs on under surface distally. Metatarsus III spineless but bearing stiff setae and a small patch of scopular hairs distally; metatarsus IV with neither spines nor setae, slightly swollen distally, tapering towards base and curving upwards; under surface entirely and densely scopulated, save for small tapering basal portion.

*Pedipalps* hardly distinguishable from *M. terricola*.

*Measurements*.—Chelicerae to end of abdomen, nearly 12 mm. Carapace 6 mm. long, 5.7 mm. wide. 1st leg 15.5, 4th leg 16.5 mm. long.

A ♂ (No. 7813) from Brandvlei, Worc., appears referable to this species; it differs from the Houwhoek ♂ in that the legs are unicolorous and longer relatively to the carapace, the latter being identical in measurements with *M. peringueyi*; eyes, palp, scopulation, and metatarsus IV are the same; the spination is slightly stronger, and cephalic portion of carapace smoother and more reticulated than in *peringueyi*.

Nine ♀ ♀ and jv. (No. B1555-6) from Beaufort West are practically identical in appearance and characters with the Matjesfontein specimens, and there is no doubt that the species extends also to the above locality.

#### MOGGRIDGEA LATUS, n. sp.

*Specimens*.—Nine ♀ ♀ (types) and 32 jv. (No. 150,082), taken by Dr. W. F. Purcell from an old mud wall at Caledon; 7/10.

This species is very closely allied to *M. peringueyi*, and with the advent of the male it may prove to be a very distinct local variety; the main distinction being in the ocular area and in general size.

*Colour*.—Carapace and legs infuscated brown; abdomen dark purplish black above in adults, and testaceous below; the upper surface bearing traces of testaceous spots and markings. In younger specimens (seen in spirits) the abdomen has distinct testaceous markings bringing out oblique lines down the abdomen; the anterior, darker half of the abdomen usually has 4 testaceous spots forming a square, and a continuation of light spots down each side; in some, black oblique infuscations on a light surface make the principal pattern, and in others the testaceous spots, somewhat elongated, on a dark ground.

*Carapace*.—General proportions much as in *peringueyi*, i. e., width nearly equal to length, and length equal to patella, tibia, and  $\frac{1}{3}$ – $\frac{1}{2}$  metatarsus of 1st leg, and subequal to tibia and metatarsus of 4th

leg; width of carapace reaches to centre of anterior eyes in *latus*, and not so far in *peringueyi*; fovea, etc. as in latter.

*Eyes*.—Ocular area at least  $2\frac{1}{2}$  times as wide as long; in *peringueyi* it is only twice as wide as long. Anterior row with their hind margins in a straight line, and their anterior margins procurved; medians small and about a diameter apart; laterals very large and separated from medians by a distance at least equal to the space occupied by both medians. Posterior row very slightly recurved, almost as wide as anterior row; medians oval, oblique, larger than laterals, and their own long diameter from the latter.

*Coxae* muticous; rest of characters as in *peringueyi*; the comb on metatarsus IV is less compact and of longer, finer spines; also sternal sigilla are larger and deeper than in the latter.

*Measurements*.—Largest specimen: chelicerae to end of abdomen 25.3 mm.; carapace 10 mm. long and 9 mm. wide.

#### MOGGRIDGEA TERRICOLA, Sim. (Text-fig. 1).

1903. Simon, E., Ann. Soc. Ent. Belg. vol. 47, pt. 1, p. 22.

1903. Simon, E., Hist. Nat. des Araign. vol. 2, pp. 878 and 881.

1903. Purcell, W., F., Ann. S. Afr. Mus. vol. 3, pt. 4, pp. 71 and 73.

1915. Hewitt, J., Ann. Transv. Mus. vol. 5, No. 2, p. 92.

*Specimens*.—♂ (No. 3499) and 4 ♀ ♀ (Nos. 150,481 and B 1175), Bergvleit, Diep R., Cape Peninsula (W. F. Purcell, 10/96 and 5/15).

♂. *Colour*.—Carapace very dark mahogany-brown; posterior legs lighter in colour; abdomen dull testaceous, strongly infuscated dorsally, especially posteriorly; under surface pale; sternum pale yellowish-brown; anterior coxae somewhat darker.

*Carapace*.—Equal in length to tibia and metatarsus of 1st leg, and equal to or slightly exceeding tibia and patella of 4th leg. Surface densely granular save for a band from fovea to ocular tubercle. Fovea slightly recurved.

*Eyes*.—Ocular area twice as wide as long. Front row of eyes straight; medians round, a radius apart, and larger than anterior laterals, which are oval, oblique, and about a diameter distant from the medians. Posterior row recurved and not so broad as anterior row; medians small and flat and close to laterals, which are very slightly larger.

*Labium* and coxae of pedipalps muticous; 3rd coxae with a small patch of bristles corresponding to patch of spinules in ♀.

*Chelicerae* with 4 small teeth on outer and 4 on inner margin; no rastellum. Posterior sternal sigilla large, inclined towards each other,



opposite posterior edge of 2nd coxae, and well separated from margin.

*Legs.*—Clothed with short sparse hairs proximally, and longer more numerous ones distally. Tarsi short and stout, spineless and scopulated. Metatarsus I with 3 spines on anterior side and 3 on posterior. Metatarsus II similar, but with finer spines. Former not scopulated below, latter with a few scopular hairs anteriorly. Metatarsus III with long stiff hairs, many somewhat spiniform in character; no scopulation. Metatarsus IV similar and scopulated over  $\frac{1}{2}$  its length below. Tibiae I and II well armed with stout spines.

*Pedipalps* spineless; tibia swollen basally and hollowed out on under surface, latter portion carrying long hairs; bulb (Text-fig. 1)

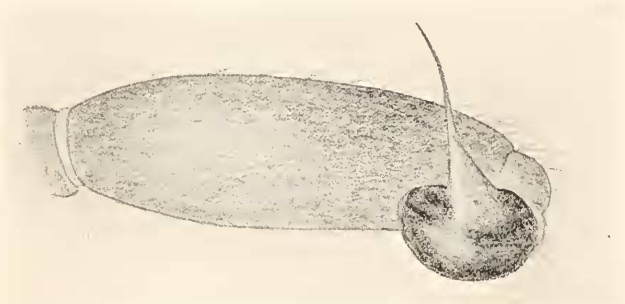


FIG. 1.—*Moggridgea terricola*, Sim. Right palp, under side.

oval, with process stout basally, tapering rapidly towards extremity, and pointing outwards and upwards.

*Measurements.*—Total length 8 mm.; carapace 4.5 mm. long and 4 mm. broad.

#### GEN. POECILOMIGAS, E. Sim.

##### POECILOMIGAS ABRAHAMI, O. P. Cambr.

1889. *Moggridgea abrahami*, Cambr., O. P., P. Z. S. 1889, p. 41, pl. 2, fig. 3.  
 1889. *Moggridgea tidmarshi*, Lenz., Zool. Anz. Jhrg. 12, 1889, p. 578.  
 1892. *Migas abrahami*, Simon, E., Hist. Nat. des Araign. 2nd ed. v. 1, pp. 82 and 84.  
 1895. *Moggridgea abrahami*, Pocock, Ann. Mag. Nat. Hist. (6), vol. 16, p. 187.  
 1897. „ „ Pocock, P. Z. S. 1897, p. 733.



dark brown; III and IV lighter, being an ochraceous brown with an olivaceous tinge.

*Carapace*.—Strongly granulated and with deep cephalic grooves; ocular area and border of carapace reticulated. Central granular ridge from ocular tubercle, distinct; lateral ones not so distinct. Length of carapace equal to metatarsus and  $\frac{1}{2}$ – $\frac{2}{3}$  tarsus of first leg, and to metatarsus and about  $\frac{1}{4}$  tarsus of 4th leg; it is subequal in length to metatarsus and tarsus of 2nd leg.

*Eyes*.—Front row straight, subequal, equidistant, laterals round. Posterior row straight, medians small, directly behind inner side of anterior laterals, and distant their own diameter from posterior laterals.

*Pedipalps* extend to just over  $\frac{1}{2}$  tibia of 1st leg; otherwise as in Plate IX, fig. 1.

*Legs*.—Tarsi I and II unspined. Tarsus III with 1 spine on outer side. Tarsus IV with 8–10 small spines on outer side; all four tarsi scopulated. Metatarsus I very slightly curved, 8 spines on inner and 9 on outer side. Metatarsus II with 7 spines on inner side and 8 on outer. Metatarsi III and IV spineless but with bristly hairs. Tibiae I and II heavily spined; III and IV unspined. Patella I with 5 apical spines on under and anterior surface; patella II with a few weak spines, III and IV with none. Tarsal claw IV with 2 basal teeth (allied species *S. brevipalpis* has 6 teeth around curve).

*Measurements*.—Total length 12 mm.; carapace 5 mm. long; 1st leg 16 mm.; 3rd leg 12.5; 4th leg 16.5 mm.

This species is closely allied to *S. brevipalpis* (Purc.).

#### S. BREVIPALPIS, Purc.

1903. *S. brevipalpis*, Purcell, Ann. S. Afr. Mus. vol. 3, pt. 4, p. 75.

1915. *S. brevipalpis*, Hewitt, Rec. Albany Mus. vol. 3, No. 2, p. 81.

A ♂ specimen (No. B 778) taken at Ashton Robst. Div. by T. O'Connor 2/7/14 appears to be a black variety of *brevipalpis*; apart from colour it also has stronger setae and varies in spination. The eyes also are slightly different; the anterior row appearing even slightly recurved, and the laterals round (approximately) and slightly larger than the medians.

#### STASIMOPUS KENTANICUS, Purc. (Plate IX, fig. 2).

1903. *S. kentanicus*, Purcell, Ann. S. Afr. Mus. vol. 3, pt. 4, p. 82 and p. 87.

1915. *S. kentanicus*, Hewitt, Rec. Albany Mus. vol. 3, pt. 2, p. 84.

*Specimens*.—A ♂ (No. 14,685) from Kentani (H. P. Abernethy, 1909); also another ♂ (B 782) by the same collector but with no locality or date.

*Colour*.—Upper surface of chelicerae, cephalothorax, and abdomen deep black; legs also black with very slight brownish tinge, as far as tibiae; metatarsi and tarsi brownish-red in colour. Sternum, coxae, and bases of pedipalps very dark brown; under abdomen black; genital plate, lung operculae and spinners light brown.

*Cephalothorax*.—Length equals metatarsus and  $\frac{2}{3}$  tarsus of 1st leg, and metatarsus and about  $\frac{1}{3}$  tarsus of 4th leg; also equals tibia and patella, and slightly exceeds metatarsus and tarsus of 2nd leg. Border of carapace slightly raised; ridges in centre of cephalic region well marked; middle one reaching nearly to fovea.

*Eyes*.—Front row slightly procurved: eyes equidistant; laterals and medians subequal, the medians being round and dark and the laterals oval. Posterior row slightly recurved; laterals round, flat, smaller than anterior medians, and dark; medians light, subtriangular, larger than and almost touching laterals; and situated almost behind anterior laterals, to which they are subequal in size.

*Spinners* short and stout, equal in length to  $\frac{1}{2}$  the sternum, and infuscated below as in female. Spinners and under abdomen somewhat hairy; upper abdomen sparsely covered with black hairs.

*Labium* long, convex, and mucous. Posterior sternal sigilla long, almost vertical, opposite 2 pair of legs, and more than their long diameter from the margin.

*Pedipalps*.—Tibia long and swelling underneath posteriorly. Basal portion of bulb broad and globular and ending in a long style, curved outwards, tapering and fine. (Plate IX, fig. 2).

*Chelicerae* with 4-5 teeth on outer edge; 3-4 on inner, with a few denticles between them.

*Legs* long and slender. Tarsus I scopulate down centre; band of 18 short stout spines down outer side, and 11-12 down inner. Metatarsus I not scopulate but heavily spined underneath and at sides. Tibia I also heavily spined underneath; patella with a few spines at apex underneath. Tarsus and metatarsus II the same as 1st leg; metatarsi I and II are long and swell very gradually distally. Tarsi I and II short compared with tarsi III and IV; narrow at base and swelling in centre; broad on top; scopulated below; also spined at sides, III less so than IV. Metatarsus III heavily and irregularly spined underneath and at sides (spines longer). Femora I and II long and slender; III and IV stouter and shorter and swelling in centre below; III shorter than IV or II.

*Measurements.*—Length 17·8 mm. (spinners excluded). Carapace 7 mm. long and 6·5 wide; 1st leg 24, 3rd leg 18·5, 4th leg 25·5 mm. long.

Very similar to *S. gigas* (Hewitt), especially in appearance; though considerably smaller. Latter however has stouter process to bulb, and tarsus of first leg is far less heavily spined; 4th tarsal claws of *S. gigas* have 3 stout basal spines and 4 small ones distally inside the curve; *kentanicus* has a basal comb of about 5 spines and about 5 sharp teeth in curve; anterior claws also have more numerous, sharper teeth.

STASIMOPUS NANUS, n. sp.

*Specimens.*—A ♀ (No. B 89, Type) from Smithfield, Orange Free State, collected by Dr. Kannemeyer.

*Colour.*—Carapace and legs dark olivaceous brown; lighter around and below ocular tubercle; anterior legs slightly lighter; abdomen dark above and below; under surface of legs, coxae and sternum dull medium brown.

*Carapace.*—Subequal in length to patella, tibia, and metatarsus I.

*Ocular tubercle.*—Subequal to tibia or metatarsus I.

Anterior row of eyes with their centres in a straight line; laterals large and broadly oval, transverse to slightly oblique, and much less than a median's diameter from the latter; anterior medians small and their own diameter apart. Posterior row also practically in a straight line, with a tendency to slight recurvation; medians subrotund, larger than anterior medians, and not quite so wide apart as anterior laterals; narrowly separated from posterior laterals, which are oval, subequal to medians in size and more raised; considerably less than their own diameter from anterior laterals; a line parallel to long axis of body and touching the outer edge of the latter, would cut the posterior laterals through their centre.

*Labium* with 5 teeth, coxae of pedipalps with 8–10.

*Spines.*—Palps with about 8 distinct spinules at base of tarsus above, and one or two scattered ones on distal upper surface of tibia; 2 spines on inner surface of tibia and 5 on outer; and a band of spines down each side of tarsus. Metatarsus I with basal patch of spinules extending over about  $\frac{1}{3}$  of upper surface; area of spinules at apex of tibia above, very small. Metatarsus II with the basal patch of spinules extending over about  $\frac{1}{4}$  of its surface; that on the tibia being less in size but greater than on tibia I. Inner surface of tibia I with 3–5 spines; outer surface with about 25 spines. Metatarsus III with about 10 spines on its anterior surface, and

with no spines on its under, apical surface, but with 1 or 2 spiniform hairs. Tibia III with small anterior apical patch of spinules. Comb on metatarsus IV composed of 6-7 spiniform setae; the patch of red spinules on patella IV above extending over about  $\frac{1}{2}$  the surface.

*Measurements.*—Total length 14 mm. Carapace, length 4·8, width 4 mm.

Two ♀ ♀ and two ♀ ♀ jv. specimens (No. 14611) from same locality and collector differ markedly in appearance from the above, both in colour and size (largest ♀ 32·5 mm., carapace 10·8 long, 9·6 wide). The eyes are different and spination heavier than in *S. nanus*.

#### GEN. IDIOPS, Perty.

##### IDIOPS PULLUS, n. sp. (Text-fig. 2 A and B).

*Specimens.*—♂. (Type, No. 14706), from region west of Mafeking and north of Vryburg (A. L. Du Toit, 1909).

*Colour.*—Carapace and legs dark brown; legs lightening distally; abdomen clothed with short dark hairs, and almost the same colour dorsally as carapace; slightly darker, though, anteriorly. Ventral surface of abdomen dull ochraceous; spinners, lung operculae, and genital shield pale brown; sternum and coxae pale brown.

*Carapace* equal in length to metatarsus I and to metatarsus IV. Fovea U-shaped with an almost semicircular depression anterior to it; in front of the latter are 2 small fine spines, one on each side; surface slightly granular and with a few short bristles posteriorly.

*Eyes.*—Anterior laterals broadly oval, prominent, only slightly inclined outwards from central axis, and narrowly separated from each other and from anterior border. Anterior medians large, circular, and less than a radius distant from each other. Posterior row procurved. Anterior laterals about an anterior median's diameter from the latter.

*Sternum.*—Posterior sigilla small, almost circular, and slightly more than their own diameter from border; anterior sigilla similar but smaller.

*Labium* and coxae of pedipalps muticous.

*Chelicerae* with 4 teeth on outer and inner row (one chelicera has only 3, but larger, on outer side).

*Legs.*—Metatarsus I very slightly curved upwards in centre; 1-2 apical spines below and 14-15 small, slightly curved spines down inner side, and 14-16 longer ones down outer. Metatarsus II with 4 apical spines on under surface and 6 other spines down outer edge and 1-2



down inner edge of under surface. Metatarsi III and IV with numerous long, slender spines. Tibia I (Text-fig. 2B), has 2 apical spurs on inner under surface. Anterior spur is very broad and thick basally, and curves upwards and outwards; it is set on a very swollen tubercle, and bears at its base anteriorly 2 bristles and a spine. Posterior and more dorsal spur short, and curving downwards and inwards. Scattered spines over rest of surface.

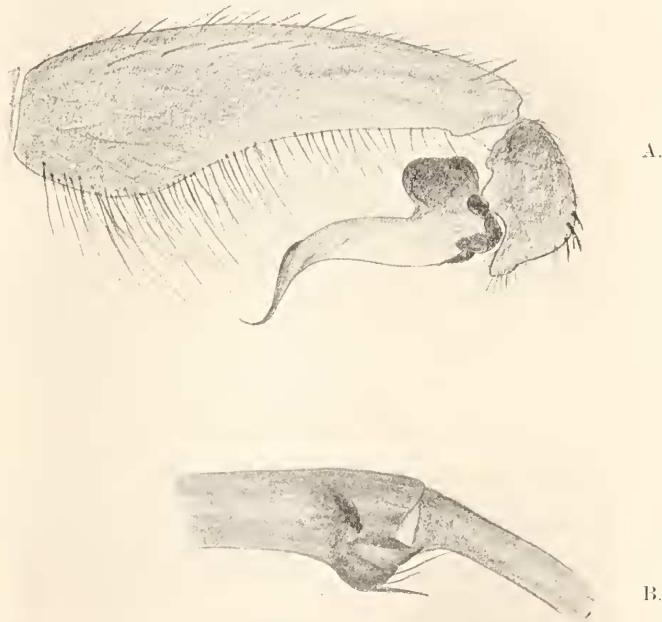


FIG. 2.—*Idioms pullus*, n. sp. A. Right hand palp, outer side. B. Tibia of first leg, under inner side.

Patella III with dorsal row of 5-6 small spines and anterior patch of about 20; only 1 or 2 spines on posterior surface. Patella IV with about 10 spinules on proximal anterior surface, set in a band of stiff short bristles, which extends to distal border.

*Tarsi*.—Tarsus I with a few scopular hairs distally, especially at sides; no spinules down centre; comb of spine-like bristles on border towards base of claws; 10 spines down outer and 7 down inner side.

Tarsus II with entire scopula; 7 spines down outer and 1 or 2 down

inner side; slightly curved upwards distally. Tarsus III also with entire scopula; stouter than metatarsus and also slightly curved upwards distally; 2 or 3 spines on anterior surface and 7 on posterior surface. Metatarsus IV fairly stout, straight, and with 1 or 2 spines on anterior surface and 4-5 on posterior surface.

*Pedipalps.*—Femur with 6 slender spines dorsally. Tibia elongate, slightly swollen basally and slightly curved dorsally; hollowed on anterior outer side, but not spined. Numerous long bristle-like hairs on under surface.

Palpal organ (Text-fig. 2A); bulb somewhat reniform in shape; style broad basally, with soft white under surface, and terminating in a slender curved process.

*Measurements.*—Carapace 6 mm. long, 5.5 wide; chelicerae to end of abdomen 14.5 mm., 1st leg 26 mm., 4th leg about 25 mm.

*IDIOPS PALAPYI*, n. sp. (Text-fig. 3A and B).

*Specimens.*—♂. (Type, No. 14628), from Palapye, Bechuanaland Protectorate (H. A. Fry, 1908).

*Colour.*—Carapace and legs light orange-brown, 1st leg becoming darker and redder distally; abdomen dull testaceous, infuscated on anterior dorsal surface and around genital aperture; median under surface dusky brown; sternum, coxae, and under-side of legs yellowish-brown.

*Carapace* equal in length to metatarsus I and to metatarsus and  $\frac{1}{2}$  tarsus of 4th leg; fovea deep, procurved, and semicircular; 2 small spines equidistant from median line and midway between ocular area and a transverse depression in front of fovea. Surface of carapace rugose; the small papillae bearing fine short spines, or stout bristles; especially noticeable posteriorly and at margins.

*Eyes.*—Anterior laterals broadly oval (almost circular) large, and close together; separated from first group by a shallow transverse depression.

Anterior medians circular, perhaps slightly larger than the laterals, and about a radius apart. Posterior row recurved; medians small, laterals oval; their front margins slightly in advance of hind margins of anterior medians and about the latter's diameter distant from them. Ocular area black, the infuscation spreading beyond anterior eyes to base of chelicerae.

*Sternum.*—Posterior sigilla almost circular, opposite 2nd pair of legs, moderately large, and their own diameter from border. Anterior sigilla smaller, similar, and opposite 1st pair of legs.

*Labium* and coxae of pedipalps muticous. *Rastellum* composed of 3 stout spines on inner apical side and one or two smaller spines.

*Chelicerae* with 6 teeth on inner row and 5 teeth on outer row.

*Legs*.—Metatarsus I curved strongly upwards and inwards towards base; 5-6 spines on outer side and 6 smaller ones on inner side anteriorly; rest of surface covered with numerous fine, regular, spine-like hairs shorter on under surface. Metatarsus II straight or only very slightly curved; 6 spines on inner side; rest of surface with fine

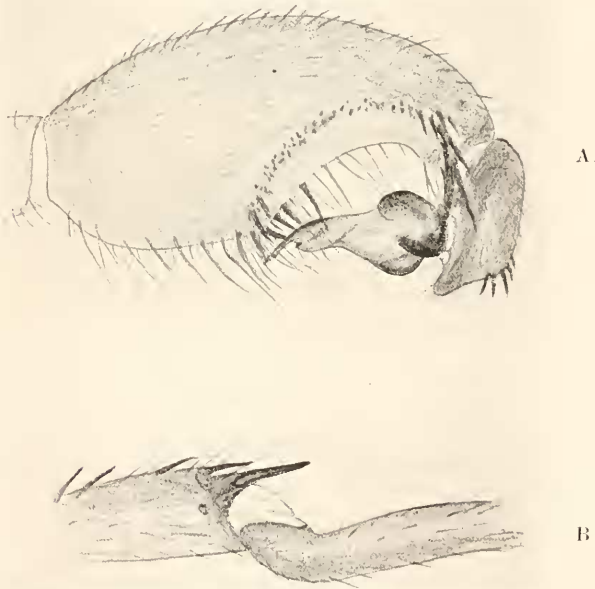


FIG. 3.—*Idiops palappyi*, n. sp. A. Right hand palp from inner side. B. Tibia of right hand first leg from inner side.

black setal hairs. Metatarsus III fairly heavily spined, especially at apex; rest of surface with fine spine-like hairs, longer on under surface; similarly with metatarsus IV.

Tibia I (Text-fig. 3 B) armed at apex on inner side with single straight projecting spur, set on a narrow tubercle at the base of which is a spine towards the outer side, below, and a black nipple on the inner side below; 2 other apical spines towards outside of under surface and 20-22 other spines on rest of under surface; 2 short spines on outer surface centrally; rest of surface with black setae. Tibia II with 3 apical spines on under and inner surface and

19-20 spines on rest of under surface. Also with 2 spines on outer surface centrally and black setae elsewhere.

Patella III with short spines on anterior border of upper surface; a central line of 7 short spines and an anterior longitudinal strip of about 10 spines, all set in an area of short black setae; also with 2 short spines posteriorly and a curved spine on under surface towards apex.

Patella IV less numerous spined, especially anteriorly.

*Tarsi*.—Tarsus I short; a few scopular hairs distally on each side of under surface, with a double row of short spines between the patches; each row broadens out towards the base of tarsus into an irregular, scattered area of small spines; distally, each row is connected to the base of the claws by a comb-like arrangement of 6 longer, regular spines; there are one or two longer spines on the sides, distally, and setose hairs on remainder of surface. Tarsus II with slightly larger and more distinct scopular patches and a less numerous but more regular row of spines down centre; distal combs not so pronounced; 2 or 3 more spines than on tarsus I, and slightly swollen distally.

Tarsus III short, much stouter than metatarsus and swollen over whole of lower surface, particularly in centre; an entire and dense scopula on under surface; one or two spines on sides. Tarsus IV similar but not quite so swollen.

*Pedipalps*.—Femur with a row of 3 spines on upper surface. Patella with 0-1 spines on outer side. Tibia swollen basally, arched dorsally and with a deep hollow on under outer side; outer edge of hollow with 4 long spines anteriorly, an irregular cluster of spines posteriorly and numerous denticles on arch between. Tarsus small; palpal organ as in Text-fig. 3 A; soft under portion below style bearing a lobe.

*Measurements*.—Carapace 8 mm. long, 6.9 mm. wide; 1st leg 32 mm.; 4th 27.5. Total length (chelicerae to end of abdomen) 19.7 mm.

This species appears closely allied to *I. parvus* (Hewitt) (Rec. Albany Mus., vol. iii, No. ii, p. 7),

IDIOPS KENTANICUS, Purc. (Text-fig. 4 A and B).

(See pp. 127 and 128.)

1903. *Acanthodon kentanicus*, Purcell, Ann. S. Afr. Mus. vol. 3, pt. 4, p. 89.

1904. *Ctenolophus kentanicus*, Purcell, Tr. S. Afr. Phil. Soc. vol. xv, pt. 3, p. 118.

*Specimens*.—♂ (No. 14,528) from Kentani (Miss Pegler, 1905).

*Colour*.—Carapace dark brown; legs slightly lighter, especially distally, where there is also a faint olivaceous tinge; upper surface of abdomen almost black; under surface dull testaceous; sternum and coxae pale brown.

*Carapace* equal in length to 4th metatarsus, and to metatarsus and about  $\frac{1}{4}$  tarsus of 1st leg; fovea crescentic and with small and inconspicuous depression in front of it, scattered papillae of surface bearing

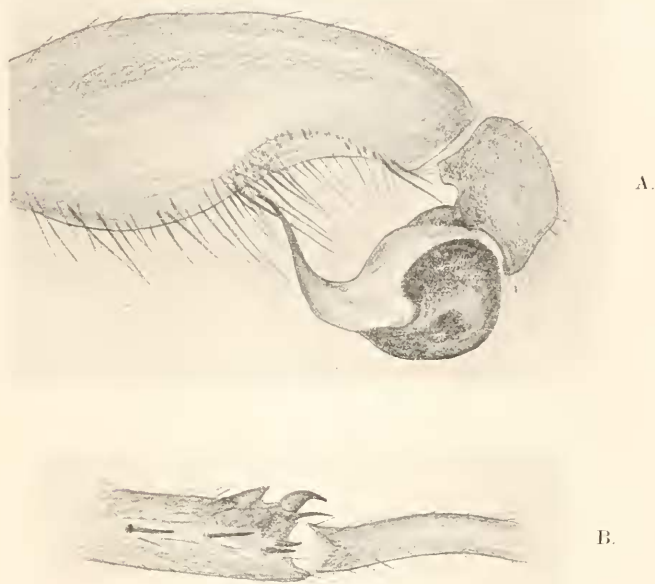


FIG. 4.—*Idiops kentanicus*, Pure. A. Right palp, outer side. B. Tibia of left first leg, under side.

hairs; border of carapace slightly raised and separated by a narrow groove.

*Eyes*.—Anterior laterals broadly oval, close together and slightly facing outwards; larger than anterior medians which are slightly more than a radius apart. Distance from front of anterior laterals to rear of anterior medians equal to breadth of posterior row. Latter is procurved; medians close to anterior medians.

*Sternum*.—Posterior sigilla indistinct, small and marginal; anterior sigilla small and touching margin opposite centre of 1st leg.

*Labium* and coxae of pedipalps muticous. *Rastellum* composed of 3-4 strong spines set on a projecting tubercle, and 3 or 4 spines continued round on upper inner edge of chelicerae.

*Chelicerae* with 5 teeth on inner edge and 4-5 denticles at base on outer edge.

*Legs*.—Metatarsus I curved sharply upwards and inwards just over  $\frac{1}{3}$  of its length from base; inner side of bend slightly swollen, darker, and bearing 5-6 spinules or short spine-like hairs; 2 apical and 1 other spine on inner surface; 1 apical and 1 other spine anteriorly on outer surface. Metatarsus II slightly curved upwards, with 1 apical and 3 other spines on outer edge of under surface. Metatarsi III and IV very slightly curved and with long fine spines on under surface. Tibia I stout, cylindrical, and shorter than metatarsus, bearing the usual 2 spurs (Text-fig. 4 B); anterior spur apical, stout, and curved, and with a long spine at base of tubercle; 2nd spur short and blunt; also 2 spines apically and 3 other spines on outer under surface. Patella III with 14 spinules on anterior surface; none dorsally, and 2-3 apically on posterior surface. Patella IV with about 20 spinules on proximal portion of anterior surface and 15-16 in a similar position on posterior surface.

*Tarsi* in general about  $\frac{2}{3}$  length of metatarsus. Tarsus I scopulated over whole length and with 1 spine on each lateral surface. Tarsus II scopulated and spineless. Tarsi III and IV scopulated and with a few spines.

*Pedipalps*.—Femur with line of stiff bristles down centre. Tibia swollen basally and with small, almost semicircular hollow on under surface anteriorly; outer arch of latter well spined, especially posteriorly. Bulb (Text-fig. 4 A) broadly reniform, process flattened basally and curved out and upwards.

*Measurements*.—Carapace 4 mm. long, 3.5 mm. wide. Tibia I 3.2 mm. Total length 9.5 mm.

No ♀ was taken at the same time, but the specimen seems to fit in as the ♂ of *I. kentanicus* rather than of *I. kolbei* (Purc.), also from Kentani. From the ♂ of the remaining Kentani species, *I. spiricola*, it differs in most details. It is closely allied, however, to *I. cregoei* from Durban; the palpal organ is similar but the process is slenderer and not spatulate at its extremity; the 1st metatarsus is more strongly curved and the tibial spines somewhat stouter.

#### GEN. ANCYLOTRYPA, E. Sim.

##### ANCYLOTRYPA PUSILLA, Purc.

1903. *A. pusilla*, Purcell, Ann. S. Afr. Mus. vol. 3, pt. 1, p. 27.

*Specimens*.—Two ♀♀ (Nos. B 2608-9) from De Aar (S. C. Schreiner and Dr. W. F. Purcell, 9/13), and 1 ♀ (No. 9454) from Vlag Kop 5-6 miles north of Hanover (Schreiner, 10/01).



♀. *Carapace*.—Cephalic portion very much raised, pale brown in colour and with a line of long setae down the centre; thoracic portion more infuscated, especially posteriorly, to fovea; latter procurved. Length of carapace equal to patella, tibia, and metatarsus and tarsus of 1st leg; and to tibia, metatarsus, and about  $\frac{1}{2}$  tarsus of 4th leg. Carapace considerably narrower opposite 3rd pair of legs.

*Eyes*.—Seen from above, hind margins of anterior row are in a slightly recurved line, and anterior margins in a distinctly procurved line; anterior medians small, round, and nearer to anterior laterals than to each other. Anterior laterals large, oval, and oblique. Posterior row strongly recurved; medians slightly larger than laterals, and almost circular but unsymmetrical in outline; laterals slightly removed, and oval. Ocular area at least  $2\frac{1}{2}$  times as wide as long.

*Abdomen* long, broader posteriorly; almost uniform dark olive-brown in colour; lung operculae and genital plate lighter brown; spinners short and stout.

*Sternum*, coxae, etc., light brown in colour; posterior sternal sigilla oval, oblique, about their long diameter from the margin and opposite 3rd coxae.

*Labium* about as long as broad and muticous. Coxae of pedipalps with a few scattered denticles at base of anterior border.

*Chelicerae* stout; rastellum composed of very stout spines; the 2 anterior ones blunt and prominent, with a more inner inwardly projecting smaller spine; groove with numerous denticles down centre, and 6-7 teeth down inner border; hairs around mouth parts dull in colour.

*Legs*.—Tarsi I and II scopulate and spineless. Tarsus III with long, sparse, scopular-like hairs, and a row of 4 spines on each side of upper surface, and a cluster of 3-4 spines on anterior surface distally. Tarsus IV with long setose hairs, and with about 15 small spines on under and anterior surface. Metatarsus I lightly scopulated, slightly more densely at sides and bearing 3 apical spines, a median, and a basal spine on under surface. Metatarsus II similarly spined but scarcely scopulated. Metatarsus III with 2 apical spines on under surface, and a band of 10-11 small spines along each side of upper surface; and 2 apical spines on anterior surface. Metatarsus IV with 2 strong apical spines on basal and 2 on anterior surface; 10-11 short spines on anterior surface, and 1 apically on posterior surface. Tibiae I and II with 4-5 spines in a line down centre. Tibia III with 5-6 spines in an irregular band down each side of upper surface. Tibia IV with some setiform hairs on under surface, and a row of setae along posterior side of upper surface. Patella III with a dense area

of short reddish spines on anterior upper surface; rest of upper surface with strong setae. Femur IV with a dense row of moderately long reddish spines on anterior and upper apical edge.

*Measurements*.—Carapace 4 mm. long and 2·8 mm. wide. Chelicerae to end of abdomen 14·5 mm.

#### ANCYLOTRYPA SPINOSA, Sim.

1889. *Ancylotrypa spinosa*, Simon, Act. Soc. Linn. Bord. vol. 42, p. 407.

1892. *Bolostromus spinosa*, Simon, Hist. Nat. des Araign. 2 ed. vol. 1, p. 100.

1897. *Ancylotrypa spinosa*, Pocock, P.Z.S. 1897, p. 732.

*Specimens*.—♀ (No. 4242) from Pt. Elizabeth (J. J. Drège, 1898).

As there is no corresponding ♂ the identification may be doubtful, so the following description is provisional.

*Carapace*.—Light ochraceous brown; darker at sides of cephalic portion; latter not so raised as in *A. pusilla*; otherwise the same as in the latter. In length subequal to tibia and metatarsus of 4th leg, and probably equal to tibia and metatarsus of 1st leg; (anterior legs damaged).

*Eyes*.—Hind margins of anterior row in a straight to slightly procurved line. Anterior medians closer together than in *A. pusilla*, and equidistant from laterals. Posterior row recurved; laterals larger than medians. Breadth of ocular area only slightly over twice its length.

*Abdomen*.—Dull testaceous below and with uniform infuscation above.

*Sternum* and coxae of legs light brown in colour; sigilla as in *pusilla*.

*Labium* and coxae of pedipalps muticous.

*Chelicerae*.—Much as in *pusilla*; hairs around mouth parts reddish in colour.

*Legs*.—Tarsi I and II very slightly scopulated at sides, and spineless. Tarsus III with 3 small spines on posterior border of upper surface, and 4–5 distally on under surface; rest of surface clothed with long hairs. Tarsus IV with long setose hairs and 7–8 small spines on under surface distally. Metatarsus I with 3 apical, 1 mesial, and 1 basal spines on under surface; fairly densely clothed and with a few scopular hairs distally. Metatarsus II similar but with longer spines. Metatarsus III with 8 small spines on posterior side and 5–6 on anterior side of upper surface, the apical spines being longer and curved; also 2 slender apical, and 1 or 2 other spines on under surface.

Metatarsus IV with 11–12 spines on under surface, the 2 central apical ones being the strongest; also 2 spines on posterior upper surface. Tibia I with a weak line of setiform spines below; tibia II similar but stronger. Tibia III with 2 spines on posterior surface and 2–3 on anterior surface. Tibia IV with several setiform spines on under surface. Patella III with 20–24 spines on anterior surface, and 2 stouter spines on posterior border of upper surface. Patella IV muticous.

*Measurements*.—Chelicerae to end of abdomen 11 mm. Length of carapace 3·5 mm.; breadth 2·7 mm.

GEN. HOMOSTOLA, E. Sim.

HOMOSTOLA ZEBRINA, Purc.\*

1902. *H. zebрина*, Purcell, Tr. S. Afr. Phil. Soc. vol. 11, pt. 4, p. 359.

1903. „ Purcell, Ann. S. Afr. Mus. vol. 3, pt. 4, p. 94.

1915. „ Hewitt, Ann. Durban Mus. vol. 1, pt. 2, p. 130.

This species has been included by Hewitt as a synonym of *Spirooctenus* (Ann. Durban Mus. vol. 1, pt. 3, pp. 221 and 223); on examining the specimens in the Museum collection, and also two others from localities noted below, it seems fairly clear that Purcell's *zebrina* is rightly referred to the genus *Homostola*; and further, that it is not synonymous with *Spirooctenus*. Apart from the differences in size and position of the posterior sternal sigilla (an important character), the other characters such as scopulation of anterior metatarsi serve to distinguish it.

*Additional notes on* ♀.

*Specimens*.—♀ (No. B 1140) from Clairmont, Natal (H. W. Bell Marley, 3/15); and ♀ (No. 150506) from Howick, Natal (Dr. W. F. Purcell, 9/05).

*Carapace*.—Equal in length to tibia, metatarsus, and tarsus of 1st leg (in Purcell's specimens, No. 8445 *ex typis*, Pietermaritzburg, carapace slightly exceeds the above in length); also equal in length to patella and tibia, and exceeding metatarsus and tarsus of 4th leg.

*Chelicerae*.—Dark red-brown, almost black in colour; rastellum composed of a row of about 6 strong, fairly even teeth on the inner side and stout bristles in continuation to the outer edge. Groove armed with 10–11 teeth down the inner side, and a line of 6 teeth diminishing in size to a few denticles down the outer side; a few denticles in the groove between, basally.

*Legs*.—Metatarsus III with a comb of about 4 stout setiform bristles, apically, on both anterior and posterior sides of the under surface.

\* See p. 136.

Metatarsus IV has 2 stout apical spines on the under surface, and between them is the 1st of a line of strong setae which runs down the central under surface; between this setal spine and the outer apical spine is a small comb of 2-3 setae; on the posterior (or inner) side of the inner apical spine is a broad comb of 5-6 bristles (mentioned by Hewitt in Ann. Durban Mus. vol. i, pt. 2, p. 130). Arrangement of spines otherwise agrees with that given in Purcell's description. Anterior tarsi and metatarsi slightly flattened dorsoventrally; metatarsi short.

GEN. SPIROCTENUS, E. Sim.

SPIROCTENUS CAMBIERAE, Purc. (Plate IX, fig. 3).

1902. *Hermachustes cambierae*, Purcell, Tr. S. Afr. Phil. Soc. vol. 11, pt. 4, p. 369.

1903. *Spiroctenus cambierae*, Simon, Hist. Nat. des Araign. vol. 2, p. 907.

*Specimens*.—3 ♂ and 1 ♀ from Caledon (Dr. W. F. Purcell, 7/10).

♀ *Colour*.—Carapace and legs dull brown, tinged with olive. Abdomen dark, almost black, both dorsally and ventrally; and with no outstanding dorsal pattern, but with a narrow band of confluent dull testaceous spots down the centre of the ventral surface; lung operenae, genital plate, and spinners about the same colour as the sternum, etc.; i.e. slightly lighter than the carapace. (The ♂ is of the same colour in general, though slightly browner; the type ♂ of Purcell's description appears also to have become slightly darker and less ochraceous after years in spirits.)

*Carapace*.—Equal in length to tibia, metatarsus and  $\frac{1}{3}$ - $\frac{1}{2}$  tarsus of 1st leg; slightly exceeding metatarsus and tarsus, and equalling patella and tibia of 4th leg. Fovea broad, deep, straight at the bottom, and slightly procurved at the ends.

*Eyes*.—Anterior row with their centres in a straight line; medians smaller than laterals. Posterior medians long, light, subequal to laterals and almost touching them.

*Spinners*.—Equal in length to about  $\frac{1}{5}$  of sternum; apical joint short and blunt.

*Labium* with 4 teeth along its apical edge; coxae of pedipalps with 25 or more denticles. *Chelicerae* with 7 large teeth.

*Pedipalps*.—Tarsi with 1-2 spines on under side; tibia with about 10 moderately long spines on under surface.

*Legs*.—Tarsus of 1st leg unspined but scopulated; metatarsus slightly scopulated anteriorly, and with 5 spines on under surface;



*Spines.*—Tibia and metatarsus I as in Plate IX, fig. 4 D; this type of spine arrangement on the tibia appears to be more common and less distinctive amongst the Spiroctenidae.

A ♂ specimen (No. B 796) from Mouille Pt., Cape Town, is coloured much the same, save that the abdomen is less green and more ochraceous. Palps as in B and C. The colouring of the above specimens has been noted, since the examples had been but a comparatively short time in spirits before being examined, and so have undergone less alteration.

#### *Amended Description of Female.*

*Carapace.*—Equal in length to tibia, metatarsus and  $\frac{1}{3}$  tarsus of 1st leg; slightly exceeding patella and tibia, and equal to or slightly exceeding metatarsus and tarsus of 4th leg. Fovea straight.

*Sternum.*—Posterior sigilla oval and slightly less than their long diameter from the margin.

*Labium.*—Armed with 2-4 teeth; coxae of pedipalps with about 30 teeth.

*Chelicerae* with 9-10 teeth and a double row of 15-16 denticles towards the base.

*Spines.*—Tarsus of pedipalps with 2 spines on inner side and 2 on outer; tibia with about 9 fine spines below. Metatarsus I with 3 spines down outer and 2 down inner side; tibia I with 2 long, fine spines on outer side. Metatarsus II the same as I, but generally with a line of setae down the centre also; both have only a few scopular hairs distally. Tibia II with a few fine spines and setae on under surface; or in some cases with a double row of fine spines down the centre.

All tarsi scopulated; posterior ones more coarsely.

Tibia of 1st leg equal in length to the metatarsus.

Claws of 1st and 4th legs with 5 teeth on outer basal row, and 5 teeth or more on the distal axial row.

Seventeen ♀♀ (No. B 2583) from Sneeuwgat Valley (4000-5000 ft.), Gt. Winterhoek Mountains, Tulbagh (R. W. Tucker, 4/16), appear referable to this species also; unfortunately no ♂ was obtained, so it cannot be determined whether the differences noted below are sufficient to separate them as a different species. In colour and appearance they coincide with *collinus*, though perhaps slightly darker; and in most other characters they are identical. The anterior legs of the Winterhoek specimens, however, are much longer than in the above species, being equal to, or even greater in length than, the 4th legs, the latter coinciding with Pocock's measurements.



In consequence, the length of the carapace equals that of tibia and metatarsus of 1st leg alone.

The terminal joint of the spinners is almost hemispherical, and shorter than in *S. collinus*. Also the posterior median eyes are somewhat smaller and the anterior row is slightly more recurved.

Dentition and spination correspond throughout, though the latter may be somewhat more robust.

Four ♀ ♀ specimens, not fully adult, taken by Dr. W. F. Purcell and R. M. Lightfoot (8/03) at Tulbagh Road Station, agree even more closely with *S. collinus*, since the front legs are normal in length and the terminal joints of the spinners is longer. As this species predominates on the Peninsula it may well have extended to the Tulbagh Valley and environs.

*SPIROCTENUS BROOMI*, n. sp.

*Specimens*.—Ten ♀ ♀ (No. 13843 Types) from Stellenbosch. (Dr. Broom, 9/10/04.) This distinct species was named by Dr. Purcell, but no description of it published.

*Colour*.—Very dark. Carapace dark infuscated brown; upper abdomen dull purplish black with faint testaceous flecks; under abdomen slightly lighter; genital plate and lung operculae pale brown. Sternum and coxae a lighter, redder brown than the carapace; legs dark, especially the anterior ones, the posterior ones being slightly lighter. Patellae lighter and slightly redder.

*Carapace*.—Equal in length to the tibia, metatarsus and  $\frac{1}{3}-\frac{1}{2}$  tarsus of 1st leg, and exceeding the metatarsus and tarsus of 4th leg. Slightly pilose posteriorly. Fovea as wide as or wider than the ocular tubercle; deep and slightly procurved.

*Eyes*.—Posterior medians oval, slightly smaller than anterior medians, equal to posterior laterals, and touching the latter. Posterior laterals smaller than the anterior laterals.

*Spinners* stout; equal in length to about  $\frac{3}{4}$  of the sternum; apical segment subconical and about equal in length to  $\frac{1}{2}$  the median segment.

*Sternum*.—Posterior sternal sigilla oval, opposite anterior side of 3rd coxae, and about  $\frac{1}{2}$  their long diameter from the margin.

*Labium*.—With 4-5 stout teeth; coxae of pedipalps with about 40 denticles.

*Chelicerae*.—With 9-10 teeth on the inner side, and an irregular row of about 15 denticles towards outer side of the base of the groove. Rastellum composed of long stout spines on the inner edge and long stout bristles on the outer edge.

*Legs*.—Clothed with longish dark hairs, often bristle-like. Tarsi scopulate and spineless. Metatarsus I with very few scopular hairs anteriorly, and bearing 2 apical and 3 other spines on the under surface; metatarsus II with no scopular hairs, but with many bristly ones; 3 apical, and 3 other spines on lower surface; metatarsi III and IV well spined. Patella III with 3 spines anteriorly, and clothed with fairly stiff hairs; patella IV with no spines or stout bristles.

Tarsal claws of 4th leg with 5-6 teeth on outer side towards base (distal 3 large), and 4 in a more distal position on the axial side; 1st leg with the usual S-shaped line of teeth, composed of 5 outer basal ones and 5 inner or axial ones, very much smaller in size.

*Measurements*.—Chelicerae to end of abdomen 20.5 mm.; spinners 2.6 mm. Carapace 7 mm. long and 5 mm. wide; sternum 3.5 mm. long and 3 mm. wide. One specimen, larger than the rest, had measurements as follows: Length 25 mm.; spinners 3.25 mm.; carapace 7.5 mm. long and 5.25 mm. wide; sternum 4 mm. long and 3.6 wide. The spination was also slightly stronger. This species is remarkably like in appearance—colour, size, etc.—to a number of *Hermacha* (see under *H. nigra*), collected by Dr. Broom at the same place and date.

According to the collector, the tubes of these specimens had low turrets round their openings, and interiorly had a looping passage connecting the lower with the upper end.

#### SPIROCTENUS PILOSUS, n. sp.

*Specimens*.—One ♀ (Type, No. B250), from Smithfield, Orange Free State (Dr. Kammeyer).

This specimen has been named provisionally in the absence of further material, since little is known of the Orange Free State Spiroctenidae; and the example certainly differs from the Cape ♀ ♀.

*Colour*.—Carapace medium brown; cephalic portion infuscated, especially along median and lateral lines; slight infuscate radiations from fovea; abdomen of specimen rather crushed; sternum and coxae of legs ochraceous brown, slightly redder anteriorly; labium dark; chelicerae red-brown below, darker above; femora of legs ochraceous, tinged olivaceous above, and from patella onwards ochraceous brown, becoming slightly redder distally.

*Carapace*.—Ornamented with fine, rather scattered hairs, which are more numerous posteriorly. Equal in length to tibia and metatarsus of 1st leg, and exceeding metatarsus and tarsus, and also patella and tibia of 4th leg. Metatarsus of 1st leg subequal in length to the tibia. Fovea slightly procurved.

*Eyes.*—Anterior row procurved; laterals much larger than medians, oval, and oblique; posterior row recurved, medians slightly smaller than the laterals and touching them.

*Chelicerae.*—Inner margin of groove with 9 teeth; outer margin with 9–10 denticles towards base, the anterior ones being equal to small teeth in size.

*Labium.*—Convex anteriorly, and bearing a few spine-like hairs. Coxae of pedipalps with about 30 teeth, each set in a small circular cup. Rastellum composed of stout spines.

*Sternum, coxae, and legs* covered with fine, long dark hairs; the abdomen also appears well clothed. Posterior sternal sigilla long, oval, opposite 3rd pair of legs, and less than their long diameter from the margin. Tarsi scopulate; posterior ones coarsely.

*Spines.*—Tarsi of palps with 2 small spines anteriorly, and 2 along inner side of under surface; tibiae with 8–9 fine spines on under surface. Tarsi spineless. Metatarsus I with 3 apical spines and 2 others in line below on outer side of under surface. Metatarsus II the same, with sometimes an extra spine on the outer edge and a mesial spine on the inner edge of the under surface. Tibia I with 0–1 spines about the centre of the under surface; tibia II with 1 spine mesially on under surface; tibia III short and stout, with 3–4 spines on upper anterior surface, and with some setiform spines on under surface. Upper surfaces of patellae III and IV, especially IV, furnished with stout reddish bristles. Anterior side of femur of 4th leg armed apically with spinule-like bristles, which on the upper edge are reddish in colour.

Tarsal claws of 4th leg bearing 4 strong teeth at the base on outer side, and 1 tooth and 2 smaller denticles anteriorly on the axial side; the claws of the 4th leg armed with 5–6 basal teeth on the outer side, and 4 teeth on the axial side distally.

*Measurements.*—Length (abdomen damaged) probably about, or over, 20 mm. Carapace 7 mm. long, 5·4 mm. wide. 1st leg 18·5 mm. long, 3rd 12·5 mm., and 4th 14 mm. long.

*SPIROCTENUS VALIDUS*, Purc. (Plate IX, fig. 5).

1902. *Hermachastes validus*, Purcell, Tr. S. Afr. Phil. Soc. vol. 11, p. 367.

1903. *Spiroctenus validus*, Simon, Hist. Nat. des Araign. vol. 2, p. 907.

*Specimens.*—Two ♂ and one ♀, Caledon (No. 150,408). Dr. W. F. Purcell, 7/10.

♂ Colour less red and more olivaceous than type of *S. validus* (Purc.); carapace similarly infuscated, legs more ochraceous and femora not so dark; tibiae and metatarsi ochraceous brown; infuscated spots above spinners on ventral surface are large.

*Palps*.—As in Plate IX, fig. 5 A, B, and C.

*Legs*.—Spinination of under surface of tibia and metatarsus of 1st leg (right-hand side) as in Plate IX, fig. 5 D.

*Measurements*.—Total length 14 (excluding spinners). Carapace 6.4; 1st leg 18 mm., 4th leg 21; the specimens are thus smaller than the types from Ashton.

♀ Agrees more in colour with the immature specimens of *S. validus*. Other specimens taken from Caledon by Dr. Purcell at the same time have been referred to *S. validus*. Of these, one calls for note, since in appearance it resembles *Stictogaster reticulatus* (Purc.); its sternal sigilla correspond to *Spiroctenus*, but in many respects it varies from that genus. It has 12 teeth on the interior border of cheliceral grooves and 13 small teeth or denticles on outer border towards centre; the labium has 4 strong teeth, and the coxae of the pedipalps about 60; the tarsi of the pedipalps are spined. The length of the carapace exceeds the tarsus and metatarsus of 4th leg and equals the tibia, metatarsus and about  $\frac{1}{2}$  tarsus of 1st leg; in this it agrees with *S. flavopunctatus*, which it also resembles in abdominal markings, but greatly exceeds in size. A similar specimen, though shorter in carapace, has been identified as *S. validus*, by Purcell, from Montague Baths, Caledon. It is recorded of one of the Caledon specimens that the nest is Y-shaped and has a turret similar to that constructed by *S. collinus*.

#### SPIROCTENUS GOOLDI, Purc.

1903. *Hermachastes gooldi*, Purcell, Ann. S. Afr. Mus. vol. 3, pt. 4, p. 95.

*Specimens*.—♂ (No. B 2341). St. James. Cape Peninsula. (Cyril French, 7/09). This example differs from either of the Peninsula species, *collinus* and *lightfooti*, but agrees in size and proportions, palp and spinination (with slight variations), with the type specimen of *S. gooldi*. In appearance it is darker in colour, and slightly stouter.

To the description of *gooldi* may be added—

*Carapace* equal in length to 4th metatarsus and subequal to patella and tibia and to metatarsus and tarsus of 1st leg; in this it coincides with *S. collinus*, but differs from *S. tricalcaratus* (Purc.), to which

it is closely allied in palpal organ and spination. In *tricalcaratus* the carapace equals metatarsus and  $\frac{1}{3}$  tarsus of 4th leg and is less than patella and tibia, and metatarsus and tarsus of 1st leg.

*Spinners* equal in length to  $\frac{3}{4}$  of sternum, as in *tricalcaratus*; in *collinus* the spinners are the same length as sternum.

*Labium* and coxae of pedipalps are muticous.

*Chelicerae* with 8 teeth and a few minute scattered denticles.

SPIROCTENUS PURCELLI, n. sp. Plate IX, fig. 6 A, B, and C).

*Specimens*.—♂ (Type No. 150,472). Simonstown. (Dr. W. F. Purcell, 4/10).

*Colour*.—Carapace and upper surface of femora dark ochraceous brown. Cephalic portion slightly darker, with a line down centre to fovea; under surface of femora lighter and tinged with olive; legs slightly browner and darker distally; palps lighter distally and tinged with olive. Entire under surface ochraceous; upper surface of abdomen strongly infuscated, especially anteriorly; posteriorly, infuscation takes the form of a central dark line and 3 to 4 distinct oblique dark lines branching from it; sides of abdomen clear ochraceous; small dark spot on under abdomen below each posterior spinner.

*Carapace*.—Equal in length to patella and  $\frac{5}{6}$  tibia of 1st leg, or to metatarsus and  $\frac{1}{2}$  tarsus of 1st leg, and equals  $\frac{6}{7}$  metatarsus IV. Fovea deep and very strongly recurved.

*Eyes*.—Front row well procurved and large; medians round, laterals oval, larger, and equidistant. Posterior row recurved; medians oval, slightly smaller than laterals and touching them.

*Labium* and coxae of pedipalps muticous; chelicerae with 9 teeth. Posterior spinners equal in length to  $\frac{2}{3}$  sternum; posterior joint just less than  $\frac{1}{2}$  subapical joint.

*Pedipalps*.—As in Plate IX, fig. 6 A and B.; cf. *S. collinus* (Purc.).

*Legs*.—Tarsi muticous (may have small spinules below). Scopulae divided by line of setae in every case; setal band of IV being broad and merging with scopula. The lines of setae down tarsi I and II are continued down the metatarsi, which are scopulated distally over  $\frac{1}{3}$  to  $\frac{1}{2}$  of their length. Metatarsus I fairly strongly curved; spined below, as in Plate IX, fig. 6 C. Tibia I as in Plate IX, fig. 6 C. Metatarsus II with 1 apical spine on inner edge, 1 below it mesially; 3 spines down inner side and one in centre of outer side; also, one on upper surface below centre.

*Measurements*.—Total length 19.5 mm., excluding spinners; 21.6 including them. Carapace, 6 mm. long, 4.75 wide, 1st leg 20.5; 4th leg 25 mm.

## GEN. HERMACHA, E. Sim.

## HERMACHA CURVIPES, Purc.

1902. *Hermacha curvipes*, Purcell, Tr. S. Afr. Phil. Soc. vol. 11, pt. 4, p. 377.

*Specimens*.—Numerous ♀♀ from Simonstown; collected by Dr. W. F. Purcell.

♀ *Colour* medium brown; carapace and legs syncolorous, chelicerae slightly darker; abdomen dull testaceous brown on upper surface, with moderately distinct tree pattern; under surface yellowish-brown; whole of abdomen covered with long yellowish-brown hairs.

*Carapace* covered with appressed, golden silky hairs; fovea straight and about as wide as ocular tubercle. Length of carapace equal to metatarsus and tarsus of 4th leg; also equals tibia, metatarsus and  $\frac{1}{2}$  tarsus of 1st leg.

*Eyes*.—Anterior row with hind margins in a straight line, and front margins slightly procurved; anterior medians about  $\frac{3}{4}$  their own diameter apart; laterals elongate and about a median's diameter from margin. Posterior row recurved; medians small, ovate, and almost touching laterals. Posterior laterals longer and equal in area to anterior laterals.

*Labium* with 0-2 denticles.

*Chelicerae* with 9 teeth (occasionally with 11 on one chelicera); and a row of irregular, fairly numerous denticles at base of groove. Coxae of pedipalps with large area of denticles (about 90), distal ones scattered.

*Spinners*.—Posterior spinners long; equal in length to sternum and twice labium and also from fovea to front edge of carapace or over. Distal segment long and slender, as long as basal segment and slightly longer than middle segment; anterior spinners about their own length apart.

*Sternum* and coxae yellowish-brown and well clad with darker brown hairs, which are stiffer around margin of sternum. Posterior sigilla nearly touching margin; long and oval.

*Spines*.—Pedipalps: tibiae with 4 apical, 2 mesial and 2 basal spines on under surface and 1 on inner side. Tarsi with no spines. Metatarsus I with 2 apical, 1 mesial, and 1 basal spines on under surface. Metatarsus II with 5-7 spines on under surface, and 1 large median spine on upper inner surface. Metatarsus III heavily spined, especially on outer and upper surfaces. Metatarsus IV also well spined,



but somewhat irregularly; apical spines large, particularly inner one, which is long and curved.

*Scopula* entire on 1st and 2nd metatarsi; absent on 3rd and 4th save for a few scopular hairs and setae on 3rd. Tarsi are all scopulate; that of 2nd leg has a narrow band of very fine setae, and 3rd and 4th have a distinct band of setae down centre.

*Measurements.*—Length of carapace 7 mm., breadth 5. Chelicerae to end of abdomen 17.5 mm.; spinners 5 mm.; tibia I, 3 mm. long (equal to metatarsus and about  $\frac{1}{3}$  tarsus), 1st leg 17 mm., 4th leg 19 mm. long.

This species occurs elsewhere in the Peninsula, occasionally with slight differences as noted.

♂, ♀ and jv. (B 2342) from St. James (C. French, 7/09); specimens smaller than type and spinners slightly shorter; ♂ otherwise identical, though tibia of palp is shorter and stouter, and carapace is slightly longer relatively to legs, and relatively broader; spinners also equal sternum and labium only, and do not reach to front of carapace. Pedipalp also with one or two extra spines on inner side of tibia.

Also ♂ and jv. ♀, Platteklip Ravine. (W. F. Purcell, 6/10 and 1900). Juvenile specimens from Newlands (Skeleton Ravine) and Wynberg Hill appear referable also to *H. curripes*.

HERMACHA BICOLOR, Poc. (Text-fig. 5 A and B).

1897. *Brachythele bicolor*, Pocock, P.Z.S. 1897, pp. 735 and 736.  
1898. *Brachythele bicolor*, Pocock, A.M.N.H. (7) vol. ii, p. 199.  
1902. *Brachytheliscus bicolor*, Pocock, A.M.N.H. (7), vol. x, p. 317.  
1915. *Hermacha bicolor*, Hewitt, Ann. Durban Mus. vol. i. pt. 2, pp. 125-7.

*Specimens* 1 ♂ and 2 ♀ ♀ (Nos. B 888 and 889) from Stella Bush (Durban), Natal. (H. Bell-Marley, 1/1915). ♂, 4 ♀ ♀, and 4 jv. ♀ (No. 150, 710) from near Port Shepstone, Natal (Dr. and Mrs. Purcell, 9/05).

The females agree with Pocock's description, except in the proportion of the carapace to the legs; the length of the carapace equals that of the tibia, metatarsus and  $\frac{1}{2}$  tarsus of 1st leg, and slightly exceeds the metatarsus and tarsus of 4th leg; there is also the usual row of small denticles in grooves of chelicerae, which may have been overlooked by Pocock. The bicolor markings are also more olive and orange than black and red; this may be due to the relative ages of the specimens.

The male differs slightly from Hewitt's description in that metatarsus I is curved (though distinct from *H. curripes*) and metatarsus II

is slender and also slightly curved; the arrangement of spines also differs somewhat (spination is hardly a sure character, since it often varies on the corresponding legs of the same specimen; further the spines are too apt to get rubbed off, and the scar left may be easily overlooked).

The fovea is deep and slightly recurved at ends.

Posterior sternal sigilla are large, oval, and nearly touching margin.

Anterior sigilla practically touching margin.

Bulb of pedipalp as in Text-fig. 5 B.



FIG. 5.—*Hermacha bicolor*, Poc Right hand palp from outer side.

In the Port Shepstone specimens the ♂ has longer and more numerous spined front legs, but is not apparently distinct from *bicolor*. Metatarsi I and II are not so much curved as in the Stella Bush specimens, nor are the tarsi so nearly white underneath. The bulb of pedipalp (see Text-fig. 5 A) appears distinct from the Stella Bush specimen (fig. B); the difference, however, is due to torsion; viewed differently, they are the same.

Of the females 2 have much lighter legs, but do not differ in structural characters from the darker ones, and are presumably the same species; in all, however, the bicolor markings are not very pronounced; the measurements also are not fully in accord with those given by Pocock. There seem, however, no adequate grounds for separating the Port Shepstone specimens from the species.

A small ♂ and a young ♀ (No. 150,504 and 150,627) from

Howick, Natal (W. F. Purcell, 9/05), also appear to belong to *H. bicolor*; although very small (total length 8.5 mm., spinners 2 mm., carapace 4 mm. long and 3 wide) the ♂ agrees with the Port Shepstone specimen. The ♀ has no bicolor markings and is fairly indeterminable.

As a rule ♀ *Hermacha* have so much in common that the separation or identification of specimens, in the absence of a ♂, is a matter of great uncertainty. The fact that the ♂♂ have much clearer specific characters may be due to their free and active life, whereas the ♀♀, which live a sedentary life in similarly constructed tubes, generally in a uniform type of soil, are naturally more level in character and generally blended together. No doubt the ♂ differentiations in character are also transmitted in degree to the ♀♀, which, with individual and distributional variation, may account for the distinctions which can be made specific in the ♀ when the ♂ is known.

*HERMACHA FULVUS*, n. sp. (Text-fig. 6).

*Specimens*.—One ♂ (No. 150,406) from Caledon (Dr. W. F. Purcell, 7/10).

*Carapace*.—Light mahogany-brown in colour, covered with appressed yellow hairs, longer at border of carapace, which is dark-edged; fovea shallow and sub-rotund; cephalic portion scarcely raised, grooves shallow. Equal in length to metatarsus and  $\frac{1}{6}$  to  $\frac{1}{4}$  of tarsus of 4th leg; also equal or subequal to metatarsus and tarsus of 1st leg, and equal to tibia and patella of 2nd leg.

*Eyes*.—Front row with their centres in a straight line; posterior laterals smaller than anterior laterals; medians oval and touching laterals.

*Abdomen* dark brown, covered with short golden brown hairs above and below and with longer, stiffer dark ones above; spots or pattern practically invisible. Under surface ochraceous.

*Spinners* pale ochraceous, equal in length to the sternum; moderately stout; penultimate joint shorter than apical or basal joint; inferior spinners short and about their own diameter apart.

*Sternum* pale orange-brown, slightly darker at border; posterior sternal sigilla small, less than long diameter from margin. Coxae same general colour as sternum; both covered with moderately long dark hairs; the coxae have in addition a slight yellow pubescence. Coxae of pedipalps with a strip of 30–35 denticles. Labium muticous.

*Chelicerae* armed with stiff black hairs at apices; rastellum of moderately short bristles. Inner side of groove with 6–7 teeth, somewhat scattered, and 1 or 2 denticles lower down in groove.

*Legs*.—Clothed with yellow pubescence and longer fine dark hairs; under sides paler with olivaceous tinge, especially on femora. Metatarsus of 1st leg similar to *H. curvipes*; considerably curved and much narrower at base.

*Pedipalps*.—Tibia with 2 spines on outer side anteriorly; 2 underneath on outer side towards middle, 2 inside underneath by bulb, and 3 on the inner side towards apex. Bulb somewhat pear-shaped, tapering to a hard dark style which curves slightly out and up, and reaches about  $\frac{3}{4}$  way down the tibia (Text-fig. 6).

*Spines*.—Tarsus and metatarsus of 1st leg spineless, or with at most one spine on under side of metatarsus; tibia has a very stout curved spine on outer side at apex, and 2 others towards the centre; 0-1 basal spines on outer under surface, 1-2 spines on inner under



FIG. 6.—*Hermacha fulvus*, n. sp. Right hand pedipalp, outer side.

surface and 2 on inner side. Metatarsus II with 0-1 spines at apex and 1-2 on outer side of under surface. Metatarsi III and IV heavily and somewhat irregularly spined.

Scopula on tarsus and metatarsus of both 1st and 2nd legs fairly dense and undivided; scopula on tarsus of 3rd leg undivided; metatarsus scopulated over nearly  $\frac{1}{2}$  its length; scopula on tarsus of 4th leg divided by a band of setae; metatarsus with setose, but with no scopular hairs.

*Measurements*.—Total length 13 mm.; spinners 2.9 mm.; carapace 6 mm. long and 4.2 mm. wide.

#### HERMACHA NIGRA, n. sp.

*Specimens*.—Two ♀♀ (Types, No. 13,899), Bergvleit Flats, Cape Peninsula (Dr. W. F. Purcell, 9/04); 15 ♀♀ and juv. (No. 12,166). Bergvleit Flats, Cape Peninsula (Dr. W. F. Purcell, 10/02).

*Carapace*.—Dark mahogany brown with sparse short yellowish hairs, somewhat denser towards the hinder portion. Equal in length

to tibia, metatarsus, and  $\frac{1}{3}$ - $\frac{1}{4}$  tarsus of the 1st leg, and equal to or exceeding the metatarsus and tarsus of the 4th leg. Fovea straight.

*Eyes.*—Front row slightly procurved; anterior medians small and about their own diameter apart; anterior laterals more than this diameter from the anterior margin of the carapace. Posterior medians oval and touching laterals, which are subequal to the anterior laterals.

*Abdomen.*—Dull olive black-brown, with longer fawn-coloured hairs; no difference between the upper and under abdomen, save in some cases a faint tree pattern on the upper surface.

*Spinners.*—Just exceeding sternum in length; distal segment lighter brown and slightly longer than the preceding one; anterior spinners lighter and about their own length apart.

*Sternum* and coxae very dark mahogany colour (coxae slightly the lighter), and clothed with almost black pubescence; posterior sternal sigilla large; less than their own long diameter from the margin.

*Labium* with 0-2 denticles. Coxae of pedipalps with extensive patch of fine denticles at base. Hair fringing mouth parts rufous in colour.

*Chelicerae.*—Under surface almost red; inner groove bearing 9 teeth.

*Legs.*—Slightly lighter in colour, particularly on upper surface from patella onwards; the latter being lighter and redder than the rest, thus giving a slight bicolour appearance. Tibia I equal in length to metatarsus and about  $\frac{1}{3}$  of tarsus.

Tarsi I and II with no setal bands; tarsus III with a line of setae down centre, and tarsus IV with a broad band of setae.

Metatarsus I with scopula entire, and with 2 apical, 1 mesial, and 1 basal spines on under surface. Metatarsus II with the scopula very thin to absent on the lower half; 2 apical and 5 other spines on the under surface; 1 small spine on the inner side and sometimes 1 above. Metatarsi III and IV with a few scopular hairs and setae distally on under surface.

*Measurements.*—Chelicerae to end of abdomen 17 mm.; carapace 6 mm. long and 4 mm. wide; spinners 3 mm. long; length of 1st leg 14 mm.; of 4th, 16 mm.

A ♀ specimen (No. 150,433) from Caledon agrees with *H. nigra* in all details save size, and in carapace being considerably longer than tarsus and metatarsus of 4th leg.

*Measurements.*—Length 26 mm.; carapace 8.5 mm. long and 6 mm. wide; spinners 4.5 mm. and tibia I, 5 mm. long. It might possibly be a ♀ from a previous season.

A number of ♀ specimens (No. 3890) from Knysna are also remarkably close to *H. nigra*, but vary in a few details. In the absence of ♂♂ in any of the cases it is impossible to definitely name the species from Caledon or Knysna as *H. nigra*, but it is possible that they may be.

A number of ♀ specimens (No. 13842) from Stellenbosch strongly resemble *H. nigra*, and are also apparently closely allied to it; it is no doubt a young example of this species which was described by Simon as *Damarchodes purcelli* (Bull. Soc. Ent. Fr. 1903, No. 3, p. 43); the description, however, is of a juvenile, and is based mainly on colour and lacks specific details.

*Damarchodes* is considered by Purcell to be synonymous with *Hermacha*; Hewitt, however, thinks it allied to *Pelmatorycter* (Ann. Durban Mus. vol. 1, pt. 3, p. 224).

#### HERMACHA NIGRISPINOSUS, n. sp. (Text-fig. 7).

*Specimens*.—♂ (Type, No. B 2593) and 20 ♀♀ from around Sneeuwgat Valley (4000–4800 ft.). Gt. Winterhoek Mountains, Tulbagh (R. W. Tucker, April, 1916).

♂. *Colour*.—Carapace very dark mahogany-brown, darker towards margin, clothed with fairly dense yellow pubescence save in centre from around fovea to ocular tubercle; legs and pedipalps very dark; posterior pair slightly lighter, especially distally; tarsi light on under surface. Abdomen almost black; upper surface with yellow pubescence and sparse longer black hairs; under surface slightly lighter; genital plate and lung operculae on under side lighter brown. In spirits abdomen is seen to be spotted, especially on sides. Coxae of legs brown with olivaceous tinge; sternum and coxae of pedipalps reddish-brown.

*Carapace*.—Equal in length to metatarsus and  $\frac{1}{2}$  tarsus of 4th leg; equal to metatarsus and tarsus of 1st leg and slightly shorter than tibia and patella. Fovea straight.

*Eyes*.—Anterior medians about  $\frac{3}{4}$  of their own diameter apart; laterals larger, broadly oval, oblique, and less than  $\frac{1}{2}$  a median's diameter from them. Posterior laterals narrowly ovate, subequal in length to anterior laterals; posterior medians oval, slightly less than  $\frac{1}{2}$  laterals and nearly touching them.

*Labium*.—Mucous. Coxae of pedipalps with about 34 teeth.

*Chelicerae* with 7 teeth (2 in outer row).

*Posterior spinners* about  $\frac{3}{4}$  length of sternum; distal segment conical, equal to or slightly exceeding middle segment; sternal sigilla indistinct.



*Pedipalps.*—Femur and patella well clad in black hairs; former with a spine on outer and inner sides apically; latter with spine-like hairs and 1 weak spine on upper apical surface.

Tibia with 2 spines anteriorly above and 2 posteriorly below on outer side; on inner side, 2 spines anteriorly above and 3 anteriorly below; 1 spine posteriorly below; on upper and under surfaces, no spines (1 apparently on anterior under surface included in side spines). Spines black and stout.

*Palpal organ.*—Process of bulb black, stout, compressed laterally, slightly spatulate at end, and curving out and up (Text-fig. 7).

*Legs.*—Metatarsus I bent as in *H. curvipes*. Metatarsi II, III, and IV straight. Tarsi slightly curved upwards in centre except on 1st



FIG. 7.—*Hermacha nigrispinosus*, n. sp. Right pedipalp, outer side.

leg. Tarsi entirely scopulate. Metatarsus I scopulate on anterior half. Metatarsus II scopulate on anterior  $\frac{2}{3}$ ; remaining  $\frac{1}{3}$  with sparse scopular hairs. Metatarsus III scopulate on distal  $\frac{1}{2}$ . Metatarsus IV with a few scopular hairs distally.

*Spines.*—Tibiae and metatarsi fairly heavily armed with strong black spines and clothed in stout black hair, often setiform.

Metatarsus I spineless. Metatarsus II with 1 median and 1 posterior spine on inner surface and with 2 spines posteriorly on outer side of under surface. Tibia I with no spines above, 2 on inner side posteriorly, none on outer side; 1 stout apical spur-like spine, 2 median and 2 posterior spines on outer under surface and 2 spines on inner under surface posteriorly.

Patella I with 1 anterior and 1 posterior spine on inner surface.

Patella II with 3 anterior spines on inner surface.

Patella III with 2 small spines on anterior surface and 1 on posterior surface.

Patella IV with 1 median spine on posterior surface.

*Measurements*.—Total length (chelicerae to end of abdomen) 20 mm.; spinners 2.5 mm.; carapace 7 mm. long, 5.75 mm. broad.

♀. *Colour* as in ♂; abdomen distinctly marked above and at sides with testaceous flecks, and also to a lesser degree on ventral surface. Sternum and coxae slightly redder in colour; tarsi not paler below.

*Carapace*.—Equal in length to tibia, metatarsus and  $\frac{1}{4}$  to  $\frac{1}{3}$  tarsus of 1st leg; equal to tarsus and metatarsus of 4th leg.

*Eyes*.—As in ♂.

*Labium*.—Generally muticous; occasionally with 1 or 2 denticles.

*Coxae* of pedipalps with 30–34 teeth (variable).

*Chelicerae*.—Usually with 8 teeth on inner side of groove, and 2 to 3 denticles in groove opposite last 3 teeth; one or two specimens have 9 to 10 teeth on one chelicera.

*Posterior spinners*  $\frac{3}{4}$  to  $\frac{1}{5}$  length of sternum; terminal joint bluntly conical and slightly longer than subterminal joint.

*Legs*.—Tibia I equal to or slightly exceeding metatarsus 1; slightly less than tibia of 4th leg.

Tarsi I and II densely scopulate. Tarsus III with faint central line of setae. Tarsus IV with broad dividing line of setae.

Metatarsus I scopulate entirely; 1 spine on lower surface. Metatarsus II scopulate entirely, 1 apical, 0–1 median, and 1–3 basal spines on lower surface. Metatarsus IV with a few scopular hairs distally and with 14 spines. Patella III with 1 to 2 small spines on anterior surface; rest of the patellae are spineless. Patella IV occasionally has a spine on posterior surface.

*Measurements*.—Total length 22.5 mm.; spinners 3.4 mm.; length of carapace 9 mm., width 7 mm.; tibia of 1st leg 4 mm. long.

#### HERMACHA PURCELLI, n. sp. (Text-fig. 8).

*Specimens*.—Two ♂ (B 2670, Types) from Ashton, Robertson Div. (Walter and Dr. W. F. Purcell), 7/14 and a ♀ (No. 12395) from same locality (Dr. Purcell, 11/02).

♂ *Colour*.—Carapace and legs dark brown; abdomen testaceous brown above, spotted and flecked with black; under surface testaceous. Sternum light orange-brown; coxae slightly lighter.

*Carapace*.—Equal in length to metatarsus and  $\frac{1}{2}$  tarsus IV; also equals tibia and metatarsus I, and considerably exceeds metatarsus and tarsus I. Fovea straight to slightly procurved.

*Eyes*.—Anterior row procurved; medians large and about a radius apart; laterals oval, only slightly larger and less than a median radius from latter. Posterior medians smaller than posterior laterals and touching them.

*Spinners*.—About  $\frac{3}{4}$  of the sternum in length; apical joint longer than sub-apical.

*Labium* about 3 times as wide as long, and muticous. Coxae of pedipalps with a basal patch of about 30 teeth. Chelicerae with 7 teeth on inner side, and one large denticle in groove. Posterior sternal sigilla long, oval, fairly deeply impressed, and about their own long diameter from margin.

*Pedipalps*.—Femur with a spine anteriorly on each side of upper

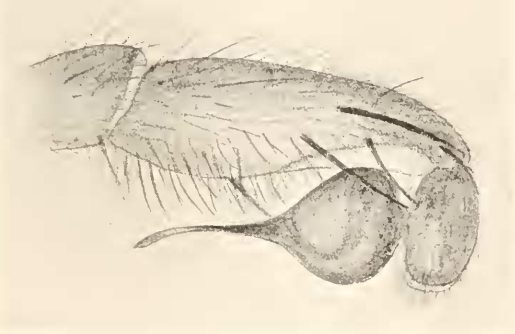


FIG. 8.—*Hermacha purcelli*, n. sp. Left pedipalp, inner side.

surface. Patella with one spine anteriorly on inner surface. Tibia with 4 strong spines on inner surface and 3 on outer, and with a few stout setose hairs on under surface; tarsus unspined. Tibia hollowed on under side anteriorly; bulb large and swollen; process slightly curved down and out, flattened dorso-ventrally and tending to be spatulate at its extremity (Text-fig. 8).

*Legs*.—Metatarsus I with distal  $\frac{1}{2}$  stouter, and curved downwards and slightly outwards. Metatarsus II slightly curved, III and IV straight; I and II paler distally.

*Scopulation*.—Tarsi I and II with scopulae undivided; III with narrow dividing line of long setae; IV with a very broad dividing line of strong setae. Metatarsus I scopulate over distal  $\frac{1}{2}$ , II over distal  $\frac{2}{3}$ ; III with scopular hairs on distal  $\frac{1}{2}$ , IV with setose hairs.

*Spines*.—Tarsi I, II, and III unspined; IV with 0-1 spines on anterior side distally. Metatarsus I with 1 small apical and 1 2

stouter spines on under surface. Metatarsus II with 1-2 apical, 3 stout spines on under surface basally and 3 on inner upper surface; III and IV heavily spined. All femora spined on upper surface.

*Measurements.*—Length of carapace just over 7 mm., width 5.3 mm., chelicerae to end of abdomen 16 mm.; tibia I 3.6 mm., slightly exceeding metatarsus I in length; tibia II slightly less than metatarsus II.

♀ *Colour.*—Carapace and legs dark to medium brown; under surface as in ♂ but slightly browner.

*Carapace.*—Slightly shorter than tibia, metatarsus, and tarsus of 1st leg, and subequal to tibia and metatarsus of 4th leg. Fovea slightly procurved.

*Eyes.*—Anterior medians less than a diameter apart, but a diameter or more from the anterior laterals which are a long oval and larger in area; posterior row with medians smaller than laterals, and touching them.

*Spinners.*—Equal in length to  $\frac{1}{5}$  of sternum; apical joint slightly shorter than subapical.

*Labium* mucicous; coxae of pedipalps with 25-30 teeth at base anteriorly.

*Chelicerae* with 8 teeth on inner side and 1 large denticle in groove towards base. Posterior sternal sigilla oval, about their long diameter from margin, and fairly deeply impressed; median sigilla in form of a semicircular impression on margin of carapace opposite 2nd coxae.

*Pedipalps.*—Tarsi scopulate and with 2-3 spines basally on under surface. Tibia with 4 apical and 4 other spines on under surface and 1 median spine on inner surface; femur and patella unspined.

*Legs.*—Tarsi I and II with scopulae undivided; III with band of dividing setae; IV with broader band of stronger setae down centre. Metatarsi I and II scopulate to base; III with scopular hairs on distal  $\frac{1}{3}$ ; IV with no scopular hairs but with numerous setae. Tibia I longer than metatarsus I.

*Spines.*—Tarsi unspined. Metatarsus I with 2 apical, and 3 spines basally on under surface; metatarsus II similar but with an extra apical spine, and a median spine on inner surface; metatarsus III with 6-7 apical and 11 other spines; metatarsus IV heavily spined, especially at apex. Patella III with 3 spines on anterior surface, set in a patch of short stout bristles. Femora unspined, but with 1 or 2 long bristles proximally on upper surface.

*Measurements.*—Total length 19.4 mm.; carapace 7 mm. long, 4.5 mm. wide; spinners 3.3 mm., and sternum about 3.9 mm. long; tibia I, 2.8 mm. long.

GEN. PIONOTHELE, Purc.

PIONOTHELE STRAMINEA, Purc.

1902. *P. straminea*, Purcell, Tr. S. Afr. Phil. Soc. vol. 11, pt. 4, p. 381.

1903. „ Simon, Hist. Nat. des Araign. vol. 2, p. 907.

*Specimens*.—♂ and ♀ (No. 11,707) Stompneus, St. Helena Bay, Mahnesbury Division (J. Gould, 5/02).

♀ *Carapace*.—Light mahogany-brown in colour, with slightly darker radiating stripes; cephalic portion lighter in colour and raised. Equal in length to, or slightly exceeding, tibia, metatarsus and tarsus of 1st leg; longer than metatarsus and tarsus of 1st leg, and equal to tibia, metatarsus and tarsus of 2nd leg (on the other side, however, it only equals the tibia and  $\frac{3}{4}$  of the metatarsus; the same side of the specimen is also less heavily spined, as noted below). Fovea very slightly procurved and wider than the ocular tubercle.

*Eyes*.—Anterior row slightly procurved (seen from above); medians large, subequal to laterals, and quite their own diameter apart; laterals subrotund. Posterior row straight to slightly recurved; laterals much smaller than anterior laterals and about their own long diameter from them: medians exceedingly small and nearly touching laterals.

*Abdomen*.—Dull testaceous brown in colour, spotted above, very slightly lighter underneath and with sparse long brown hairs.

*Spinners*.—Equal in length to  $\frac{3}{4}$  of the sternum; stout and subconical; terminal joint very short and with stiff bristly hairs at apex.

*Sternum*.—Broad posteriorly, narrowing anteriorly.

*Labium* mucicous; coxae of pedipalps with a narrow strip of about 20 teeth.

*Chelicerae* with a row of 6 teeth, and 2 or 3 inner denticles.

*Legs*.—Slightly lighter than carapace in colour. Tibia of 1st leg equal in length to the metatarsus. Tarsus and metatarsus of 1st and 2nd legs scopulated and with no setal bands; tarsus of 3rd leg clothed with long and somewhat setiform scopular hairs; setose hairs also down metatarsus, which tapers distally; tarsus of 4th leg with scopular hairs also long and setiform, and with somewhat similar hairs on the metatarsus.

*Spines*.—Metatarsus I with 2 weak apical spines, and 1–2 basal spines on under surface; metatarsus II with 2 stronger apical spines, and 2 basal spines on under surface. Tarsus IV has 0–1 spines; metatarsus IV has 3–4 apical spines underneath; the two central ones being very long ( $\frac{1}{3}$ – $\frac{1}{2}$  the length of the tarsus); about 3 other spines on the under surface, and very numerous ones on the upper and lateral

surfaces, particularly on the outer surface (the right-hand metatarsus had over 20 spines and the left had under 10; the left leg was also shorter).

*Pedipalps*.—Armed with 1 spine on outer side of base of tarsus; 4 apical spines on under surface of tibia, 1 median and 1 basal spine on outer side of under surface, and 4–5 on inner surface of tibia.

*Measurements*.—Chelicerae to end of abdomen, 13·5 mm. Carapace 5 mm. long and 3·2 mm. wide; spinners 2 mm. long. Tibia of 1st leg 2 mm. long.

Though the material is scanty and only in moderate preservation, the genus *Pionothele* seems sufficiently distinct from *Hermacha* to remain separate from it.

## FAMILY DIPLOTHELEAE.

### GEN. DIPLOTHELE, Camb.

Of the three genera of the group, *Aeropholius* and *Cestrotrema* (Sim.) are both confined to Madagascar, and *Diplothele* to India and Ceylon. The following species from Rhodesia does not agree with the Madagascan genera, but coincides rather with the Indian genus; it differs therefrom in certain respects, but the differences are not generic.

#### DIPLOTHELE ARCTURUS, n. sp.

*Specimens*.—A ♀ (No. B 2189, Type) from Arcturus, Salisbury (Dr. Melle, 12 15).

*Colour*.—Carapace and legs light reddish brown; upper surface of abdomen dull blackish brown, flecked with numerous testaceous spots; under abdomen testaceous with a black spot directly below the vulva. Sternum, coxae, and under side of legs slightly lighter than the carapace. The latter is marked with numerous infuscated lines radiating from the fovea; sides of cephalic region lightly infuscated; ocular tubercle almost entirely black.

*Carapace*.—Equal in length to the tibia, metatarsus and  $\frac{3}{4}$  tarsus of 1st leg, and to the metatarsus and  $\frac{3}{4}$  tarsus of the 4th leg. Ornamented with appressed yellow hairs and scattered black bristles, which are most numerous on the cephalic portion. Fovea small and straight, cephalic edge longer and slightly procurved.

*Ocular area* wider than long.

*Eyes*.—Anterior laterals oval, oblique, and nearly their long diameter apart anteriorly; anterior medians round and slightly smaller than the anterior laterals; at least their own diameter behind the latter and from each other. The anterior eye area is thus slightly



narrower posteriorly. Posterior medians very small, and touching laterals, which are long oval and oblique, and situated in a recurved line with the anterior medians, and a procurved line with posterior medians.

*Spinners.*—Two only. (As in Fig. 110, p. 117, Simon, Hist. Nat. des Araign. vol. 1, 1892.)

*Sternum.*—As broad as long; bearing stiff black hairs, especially on posterior borders. Three pairs of sternal sigilla; small, marginal, equal in size and opposite 1st, 2nd and 3rd coxae respectively.

*Labium* quite twice as wide as long, and bearing 4 apical teeth. Coxae of pedipalps with a small basal patch of 15–20 teeth.

*Chelicerae.*—Clothed with moderately long hairs; rastellum not prominent, composed of a row of very slender spines which are longer on internal border. A single row of 9 strong teeth on inner border of groove, and a patch of denticles in the basal portion of the groove, itself. Hairs around mouth parts long and copper-red in colour.

*Legs.*—Tarsi with no clavate hairs on upper surface; scopulae entire on under surfaces, and each divided by a band of setae which is faint in the 1st leg, and progressively stronger and wider to the 4th leg. Metatarsi I and II scopulate and with a faint trace of setae down centre; metatarsus III faintly scopulate over distal  $\frac{1}{2}$ – $\frac{2}{3}$  of its length; metatarsus IV over distal  $\frac{1}{2}$  only; each with a line of long strong setae extending beyond the scopulated portion. Tarsi I and II  $\frac{2}{3}$  length of their metatarsi, III and IV  $\frac{1}{2}$  or slightly less.

*Spines.*—Tarsi spineless. Metatarsus I spineless; metatarsus II with 1 or 2 spines basally on under surface; metatarsi III and IV armed with long strong spines. Patella III with 3 spines on anterior surface and 1 on posterior; rest of surface covered with strong bristly hairs; other patellae spineless. Tarsal claws with a single tooth situated anteriorly in the bend of the claw; claws longer than the fascicles.

*Pedipalps.*—Tarsus scopulated and divided by a line of setae; tibia weakly spined below.

*Measurements.*—Chelicerae to end of abdomen, 15 mm. Carapace 6.2 mm. long, 5 mm. wide. Legs, in order from 1–4, approximately 14, 13, 13, and 17 mm. in length.

## FAMILY. DIPLURIDAE.

### GEN. THELECHORIS, Karsch.

This genus has been made synonymous with *Ischnothele* (see Simon Hist. Nat. des Araign. 2nd ed. vol. ii, pt. 4, 1903, p. 968); from material now to hand it would appear that the synonymy is not valid, and *Thelechoris* is perfectly distinct from *Ischnothele*. It seems that

hitherto certain ♀ *Thelechoris* have been described as *Ischnothele*, whilst before the genera were merged, ♂ *Ischnothele* were referred to *Thelechoris*; thus the ♂ palp figured in Sim. Hist. Nat. des Araign. 2nd ed. vol. i, 1892, p. 70, as of *Thelechoris*, is characteristic of *Ischnothele*. Hence as up till now only *Ischnothele* ♂♂ were known, and the ♀♀ of both genera were much alike, the synonymy was probably established on account of the cross descriptions referred to above. The ♂ *Thelechoris* described below makes it clear that the genera are distinct, and the ♀ characters set out by Simon in Hist. Nat. des Araign. 1892, p. 187, should be sufficient to separate *Thelechoris* from *Ischnothele* as instituted by Ausserer in Verh. Zool. Bot. Ges. Wien. 1875, pp. 162 and 163.

*THELECHORIS AUSTRALIS*, Purc. (Text-fig. 9 A, B and C).

1903. *T. australis*, Purcell, Ann. S. Afr. Mus. vol. iii, pt. 4, p. 106.

*Specimens*.—♂ and ♀ (No. B 1948), Durban, Natal (H. W. Bell-Marley, 10/1915), and 1 ♂ and 2 ♀♀ (No. B 2401), Grahams-town (Dr. W. F. Purcell, 7/10/05); also 7 ♀♀ (No. B 2402), from Cookhouse, Somerset E.

♂ *Colour* as in female; perhaps slightly lighter and less infuscated; spinners pale and posterior ones less darkly ringed at apices of segments. Under abdomen paler than dorsal surface; genital plate and lung operculae brown; legs faintly banded by olive infuscations.

*Carapace* as long as metatarsus IV, and equal to metatarsus and tarsus of 1st leg. Fovea slightly recurved.

*Eyes*.—Anterior row equidistant, strongly recurved. Medians large, round, and almost equalling in size the broadly oval, oblique, lateral eyes. Posterior row straight; medians small, oval, touching laterals, which are smaller than anterior laterals.

*Labium* and coxae of pedipalps mucous; white inner border of the latter is raised above the rest and separated by a fine groove.

*Chelicerae* with 10-11 teeth on inner border, alternately large and small, especially anteriorly.

*Spinners*.—Posterior ones 7.5 mm. long; about equal to patella, tibia, metatarsus and tarsus of 1st leg; apical joint equal to basal and median joints in length.

*Legs* in order 4, 3, 2, 1. Metatarsi much longer than tarsi, especially in legs 3 and 4; metatarsus I straight and moderately spined, especially at apex below; metatarsus II slightly curved inwards towards base, where it is also stouter; provided on lower surface, towards base of inner side, with a small tubercle bearing an

ordinary spine; more numerous spines than on metatarsus I; tibia I subequal to metatarsus I and stouter. Tibia II shorter than meta-



FIG. 9.—*Thelechoris australis*, Purc. A. Right palp, outer side. B. Left palp, under side. C. Right-hand second leg, inner side.

tarsus II, much stouter and bearing on under side of inner surface, over one-third-way down, a stout process which has 3 teeth on its inner and under edge (see Text-fig. 9 c); inner side with 3 slender

spines in a row behind each other; other scattered spines also. Metatarsi and tibiae of 3rd and 4th legs with long, fairly numerous spines. Tarsus I reddish in colour, infuscated terminally; scanty scopula anteriorly and 1 or so weak spines. Tarsus II lighter and with 2 or 3 spines and more scopular hairs. Tarsi III and IV still lighter, more numerous spined, and with more plentiful scopulation distally; in all cases the scopular hairs are long and setose. Claws of 4th leg with uniseriate row of 5 teeth; anterior teeth longest; claws of 1st leg with row of 6 or 7 long fine teeth.

*Pedipalps*.—Tarsus short and oblong; tibia swollen medially and posteriorly; neither are spined, but tibia carries long setose hairs, particularly on under surface. Basal part of bulb pear-shaped tapering gradually to a long, fine, inwardly curved style, the apex of which curves slightly downwards and reaches to base of tibia (Text-fig. 9 A and B).

*Measurements*.—Chelicerae to end of abdomen, 9 mm.; spinners 7.5 mm.; length of carapace 4 mm., width 3.6 mm.; length of 1st leg 10.75 mm.; 2nd leg 12.25 mm.; 3rd leg 13.5 mm.; 4th leg 15 mm.

It may be mentioned that in the ♀ the 1st and 2nd legs are always practically equal in length, the 1st being longer only by a mere fraction of a millimetre.

The Grahamstown specimens are much smaller, and the male is newly moulted, and maimed in one palp, but the characters are identical. In the females slight variations from the type occur in the eyes; the Natal specimen having the median anteriors lighter and apparently slightly larger than the type, whilst in the Grahamstown specimen the posterior medians appear slightly longer, oval, and nearer to the anterior medians.

*Thelechoris* and *Ischnothele* being now separated, *Thelechoris australis*, *Purc. loc. cit.*, retains its name.

*Thelechoris karschi*, *Bos. & Lens., Hamburg Anstalt. vol. 12, p. 27, pl. II, fig. 31 and 31 a and b*, appears to be *Ischnothele karschi*; the description is of a ♀, based mainly on colour and markings, and is lacking in detail.

*Thelechoris rutenbergi*, *Karsch, Abhl. d. Naturw. v. Bremen, vol. xi, 1881, p. 196*, retains its name, and is not *Ischnothele rutenbergi* as noted by *Simon in Bull. Mus. d'Hist. Nat. 1902, No. 7, p. 514*.

*Ischnothele mashonica*, *Poc., Ann. and Mag. Nat. Hist. (7), vol. 7, p. 337*, though most vaguely described, appears a true *Ischnothele*; likewise *Ischnothele catamita*, *Sim., in Ann. del Mus. Civ. Genov. vol. xliii, p. 9*.

## GEN. ISCHNOTHELE, Ausserer.

*Eutomothele*, Simon, Ann. Soc. Ent. Fr. 1889, pp. 235-6.

? *Schismatothele*, Karsch, Zeitsch. f. g. Naturw. lii, 1879, p. 544.

*Mygale guianaise* (*M. guianensis*), Walekemaer, Hist. Nat. des Ins. Apt. 1837, vol. i, p. 231, from South America, appears from description to be an *Ischnothele*.

## ISCHNOTHELE GRACILIS, n. sp. (Text-fig. 10).

*Specimen*.—♂ (No. 8500) from East Africa, probably Mozambique (Dr. J. D. F. Gilchrist).

*Carapace*.—Reddish-brown in centre and cephalic region, shading to a pale golden-brown; margin slightly black-edged posteriorly;



FIG. 10.—*Ischnothele gracilis*, n. sp. Right hand pedipalp, outer side.

cephalic grooves moderately deep; fovea deep and transverse at bottom. Carapace ornamented with dark radiating lines and somewhat sparse appressed yellow hairs. In length it equals the 4th metatarsus, the 1st metatarsus and tarsus, and 1st tibia and metatarsus; its breadth equals its length, namely, 6.5 mm.

*Eyes*.—Ocular tubercle quite 3 times as wide as long; front row of eyes procurved; medians large and round, nearly their own diameter apart; anterior laterals slightly less in area than medians, less than a median's diameter from them and from anterior margin of carapace. Posterior row practically straight along hind margins; median posteriors very small, subtriangular, oblique, hind margins touching laterals, which are elongate and equal to or greater than anterior laterals.

*Abdomen*.—Dark brown with slight purplish tinge; narrow oblique

testaceous lines on upper surface, with a round pale yellow spot on either side anteriorly. Under surface testaceous in colour, ornamented as in *I. (Thelechoris) karschi*, but region between marks on inner margin of lower lung pockets and down to spinners is speckled black, the flecks assuming the form of 3 horizontal lines, the lower one touching the base of the anterior spinners. Abdomen clothed with long foxy-brown hairs, long dorsally, shorter ventrally.

Spinners also clothed with long hairs. Superior spinners unfortunately have the last joint missing; length of remainder is about 5 mm; basal joint equals  $\frac{3}{4}$  length of sternum and is slightly longer than the penultimate segment of superior spinners.

*Sternum*.—Rich orange-red in colour, clothed with long dark hairs; as broad as long and with 3 small sigilla on each side, level with hind margins of 1st, 2nd, and 3rd coxae, and about their own lengths from margin. Coxae light yellowish-brown and clothed with longish dark hairs.

*Labium* muticous, very much broader than long, and with light-coloured apex. Coxae of pedipalps slightly darker than leg coxae and with area of numerous denticles.

*Chelicerae* same colour as central carapace, clothed with long fairly stiff hairs, curving over apex; no rastellum; both margins of groove with teeth; 5-6 on inner, anterior ones being the larger, and 8-9 on outer margin, with 2 two smaller inner teeth between 7th and 8th teeth.

*Legs* pale yellowish-brown, with faint olivaceous tinge towards tarsi; long and clothed with long and fairly stiff hairs (often somewhat spine-like), and faintly banded in appearance. No scopulae on the metatarsi; tarsi scopulate to base and with dividing lines of setae, which are most distinct on 3rd and 4th tarsi; 3rd and 4th metatarsi fairly heavily spined. Tibia of 1st leg with small outward and upwardly curving spur on outer apex.

*Pedipalps*.—Tarsus long, tapering to tip, and with 5-6 spines down each under side towards apex; swelling at base for attachment of palpal organ; latter somewhat heart-shaped, indented and tapering suddenly to a fine style which grows almost hair-like towards apex, and is slightly curved inwards and upwards, as in Text-fig. 10. Tarsus with 5-6 spines down each under side at apex.

*Measurements*.—Chelicerae to end of abdomen 17 mm.; carapace length and breadth, 6.5 mm.; sternum, length and breadth, 3.5 mm.; 4th leg 23 mm., 3rd, 21.8 mm., 2nd, 21 mm., 1st, 19 mm. long. The order 4, 3, 2, 1 is also in agreement with Ausserer's character for *Ischnothele*.



FAMILY. CTENIZIDAE.

SEGREGARA, gen. nov. (Text-fig. 11 a.)

This name is proposed for the inclusion of such forms as have the characters of eyes, legs, chelicerae, etc., of the sub-family Idiopseae, but

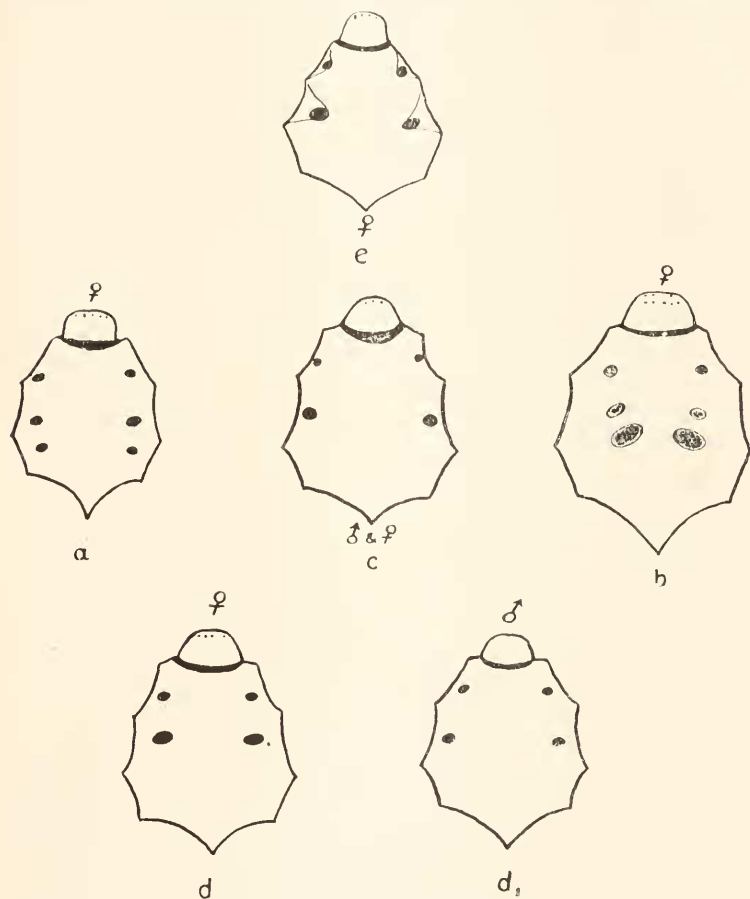


FIG. 11.—a, *Segregara*. b, *Gorygrella*. c, *Ctenolophus* = *Idiops*. d, *Idiops* (*fryi*) ♀. d<sub>1</sub>, *Idiops* (*pullax*) ♂. e, *Heliomerus* (*caffer*).

are distinct in the possession of 3 pairs of small marginal sigilla. Hitherto these have been placed in the genus *Acanthodon* (Guérin, 1838), which apparently applied originally to forms with 2 pairs of sigilla only, and was made synonymous with *Idiops* (Perty, 1833) by O. P. Cambridge in 1870, and again by Simon in 1903.

The name *Acanthodon*, therefore, should have lapsed. *Ségregara* takes its place for forms with sternum (a) (Text-fig. 11); *Idiops* form (d) should include form (e); and form (b) would retain the name *Gorgyrella* (Purcell, 1902). For the above and later reasons Hewitt's inclusion of (a), (b), and (c) under *Acanthodon* is not considered valid.

#### THE NAME ACANTHODON.

In 1833, *Delictus Anim. &c.*, pp. 197-8 (pl. 39, fig. 5), Perty finds the genus *Idiops* on a ♂ specimen, *I. fuscus*, from Brazil.

In 1837 Walckenaer, in *Ins. Apt.* vol. i, p. 379, misquotes the type as *I. aculeatus*, and makes it synonymous with *Sphasus* (now a synonym of *Oxyopes*: Fam. *Oxyopidae*). In 1838-9 Guérin in 'Arachnides du Voyage de la Favorite,' and 'Rev. Zoologique' finds the genus *Acanthodon* on a ♀ specimen from Brazil, and this name is used by Walckenaer in "Supplement à l'Ordre des Aranéides," *Ins. Apt.* vol. ii p. 434. In P.Z.S., 1870, p. 101, O. P. Cambridge gives a short *resumé* of the history of *Idiops* (Perty), in which he states that "M. Guérin-Meneville (without any reference to the genus established by M. Perty) founded the genus *Acanthodon* upon another spider undoubtedly congeneric with that upon which the genus *Idiops* had been previously established"; and that Walckenaer appears to have overlooked its identity with *Idiops* when including it in *Ins. Apt.* t. m. xi, p. 434 (not 234, as quoted in P.Z.S.).

In 1871 Ausserer separates *I. sigillatus*, described by Cambridge in 1870, as a new genus *Idiosoma* (*Verh. z. b. g. Wien*, 1871, p. 150).

In 1892, *Hist. Nat. des Ar.*, both *Acanthodon* and *Idiops* are included by Simon under *Idiopeae*, the main separating characters being given on pp. 89 and 92 as the eyes; the name *Idiops* is here applied to the American species only.

In P.Z.S. 1897, p. 731, Pocock divides the species referred to *Idiops* by Cambridge in 1870, and places the two African forms (*meadii* and *thorelli*) in the genus *Acanthodon*; probably according to Simon, although no reasons are given for the separation. A new species, *Acanthodon lacustris*, is also described from 2 ♀ specimens (Lake Tanganyika), and the diagram of the sternum coincides with that for *Idiops* and *Ctenolophus* (Text-fig. 11 (c) and (d)), which is accounted for as below. (Simon later puts *A. lacustris* in his genus *Titanidiops*, *Hist. Nat. des Ar.* 1903, p. 890).

In 1898, *A.M.N.H.* (7), vol. i, p. 320, Pocock describes a new species, *Acanthodon pretoriae*, from South Africa, and tabulates it with the other African species.

In 1902, Purcell in Trans. S. Afr. Phil. Soc. vol. xi, pt. 4, and Ann. S. Afr. Mus. vol. iii, pt. 4, describes several new species of *Acanthodon*, also from South Africa, and in the former proposes the genus *Gorgyrella* for form (b).

In 1903, *loc. cit.* p. 888, Simon having received a ♀ *Idiops* unites *Acanthodon* and *Idiops* as having rested previously on a sexual character only; adding further that the latter genus should be confined to American species, and proposing *Titauidiops* for the African species. The name *Acanthodon* should therefore disappear.

In 1903, P.Z.S. p. 350, Pocock apparently accepts *Acanthodon* as a synonym of *Idiops*.

In 1904, Trans. S. Afr. Phil. Soc., vol. xv, pt. 3, Purcell removes all his species from *Acanthodon*, 2 of which, both ♀ ♀, namely, *A. fryi* and *A. versicolor*, he transfers to the genus *Idiops*; and for the other species, both ♂ ♂ and ♀ ♀, he makes a new genus, *Ctenolophus*. Subsequently new species are described by Purcell under *Idiops*, but none are added by him to *Ctenolophus*. Hewitt, however (Rec. Albany Mus. vol. ii, 1913), adds several new species to both genera.

But previously, in Ann. Transv. Mus. vol. ii, p. 74, 1910, Hewitt describes the supposed ♀ of *A. pretoriae* (Poc. 1898), although the genus disappeared finally in 1903.

In Rec. Albany Mus. vol. ii, p. 418, he refers the species to *Idiops*, giving no reasons; and in the same volume, p. 471, describes a new species, *Acanthodon microps*. In Ann. Transv. Mus. vol. 5, pt. 6, p. 97, footnote, having examined the type, Hewitt speaks of *I. thorelli* (Cambr.) as being a true *Acanthodon*.

However, in Rec. Albany Mus. vol. ii, pt. 5, p. 412, he describes a new species, *Ctenolophus transvaalensis*; then later (Rec. Alb. Mus. vol. ii, p. 473, footnote) places it under *Gorgyrella*, as it possesses 3 pairs of sternal sigilla, the 3rd pair very small (hence it cannot be a *Gorgyrella* at all (Text-fig. 11 B)); later still he settles it as *Acanthodon*, and considers the two latter genera inseparable (Ann. Transv. Mus. vol. v, pt. 3, p. 183). Hence apparently *Acanthodon* as used by Hewitt should have the sternum as in fig. (A), *i. e.*, with 3 pairs of small sternal sigilla, of which he regards (B) as a variation.

Further, in Rec. Alb. Mus. vol. xi, p. 473, Hewitt adds a footnote that, according to Hirst, *Ctenolophus* is a synonym of *Acanthodon*; and later states, *in lit.*, that he has examined Guérin's type *A. petiti*, and considers that ♀ *Ctenolophus* is congeneric with it. But Guérin's *A. petiti* is an *Idiops* according to Cambridge, and according to Simon also it should be referred to that genus. Hence, when Hewitt says that *Ctenolophus* and *A. petiti* are congeneric, it may be taken as

equivalent to saying that *Ctenolophus* is congeneric with *Idiops*, which is borne out by the diagrams (c) and (d).

But in Ann. Durban Mus. vol. i, pt. 3, p. 225, Hewitt considers the "South African species now referred to this genus (*Acanthodon*) congeneric with the genotype of *Acanthodon* (Guérin) from Brazil," and gives a short diagnosis of *Acanthodon*, in which he states that there are "either 2 or 3 pairs of sternal sigilla, the 1st pair marginal or sometimes (= *Gorygyrella*, Purc.) a little separate from the margin." He thus includes all 3 forms a, b, and c, as one genus under the name *Acanthodon*; which, if Guérin's type is identical with Purcell's *Ctenolophus* as he maintains, has but 2 sternal sigilla as in (c), and does not apply to forms (A) and (B), but did and still does apply to forms (D) now known as *Idiops*. Thus, as the following will tend to show, the name *Acanthodon* disappeared once in 1870 (Cambr.) and once again in 1903 (Sim.), and was accepted as synonymous with *Idiops* by Pocock in 1903. Hewitt, however, still uses the name, and further includes under it the 3 forms as above; whereas it would seem more fitting to keep *Gorygyrella* separate, unite *Ctenolophus* with *Idiops*, and substitute *Segregara* for the form (A) hitherto described under the lapsed name *Acanthodon*. The creation of a new name seems necessary, since Simon's *Titanidiops* does not appear to be the same as form (A), but rather should agree with form (D). It may be mentioned that *Ctenolophus* and *Idiops* differ in one respect, namely, the latter has two rows of teeth on the cheliceral groove, whilst the outer row is represented in *Ctenolophus* by minute denticles only; this by itself is perhaps hardly sufficient for separation, though fairly constant, but would no doubt serve to divide the group into two main classes.

From the above *résumé*, it would seem that M. Perty founded the genus *Idiops*. Guérin, not having referred to this, subsequently founded the genus *Acanthodon* on a specimen, *A. petiti*, which was congeneric with Perty's *Idiops*. Walckenaer subsequently not only adopted Guérin's *Acanthodon*, but erroneously concluded that Perty's *Idiops* was really a *Sphasus*. This mistake was rectified later, but *Acanthodon* was left standing. Cambridge then (P.Z.S. 1870) states definitely that *Acanthodon* is identical with Perty's *Idiops*, and describes a series of species for this genus, from South America, Syria, Africa, and Australia; unfortunately he thus describes species which were generically different from *Idiops*. Hence Ausserer puts the Australian species *I. sigillata* into a new genus *Idiosoma*, and Simon subsequently reduces *Idiops* to the South American species and places the rest under *Acanthodon*, in which genus he includes as a synonym Ausserer's

*Idiosoma*. In 1897 Pocock records the two African species of *Idiops* (*thorelli* and *meadii*) described by Cambridge in 1870 as *Acanthodon*, and describes a new species of the genus from ♀ specimens. Subsequently Simon makes *Acanthodon* a synonym of *Idiops*, and constitutes the synonymy of the latter genus as on p. 889, Hist. Nat. des Ar. 1903; apparently re-establishing Ausserer's *Idiosoma*. The generic type for *Idiops* thus reverts to Perty's *I. fuscus*, and *Acanthodon* disappears; *A. petiti* becoming *I. petiti*. For species other than American, Simon makes new genera, *Pachyidiops* and *Titanidiops*; which Hewitt, however, does not think valid (Ann. Durb. Mus. vol. i, pt. 3, p. 225, note).

Purcell in 1904 removes all his species from *Acanthodon*, placing some in a new genus, *Ctenolophus*, and the rest in *Idiops*. About 1910 Hewitt describes the supposed ♀ of *Acanthodon pretoriae*, of which the ♂ was described by Pocock in 1898, and subsequently describes other species under the genus *Acanthodon*, although the name had lapsed. Amongst species which finally come to rest under *Acanthodon* are forms with 3 pairs of small marginal sternal sigilla, which Hewitt considers generically the same as Purcell's *Gorgyrella*; further, having examined Guérin's type on which *Acanthodon* was originally based, he finds that *Ctenolophus* is congeneric with the original *Acanthodon* (which, however, is *Idiops*); hence *Ctenolophus*, *Gorgyrella*, and an apparently new form are all included by him under the lapsed *Acanthodon*. If sternal sigilla are thus considered valueless for generic separation, *Idiops* itself has little support; hence it is not surprising that Hewitt considers it probable that "*Acanthodon* and *Idiops* will eventually be united" (Ann. Durb. Mus. vol. i, pt. 3, p. 225, footnote); in fact the subfamily *Idiopeae* would practically become one big genus.

A possible solution is suggested in the previous and following pages in which the name *Segregara* shall be applied to forms with 3 pairs of small marginal to [submarginal sigilla, from which fresh genera, *Gorgyrella* and *Idiops* (including *Ctenolophus*), have branched off.

#### SYSTEMATIC VALUE OF STERNAL SIGILLA (Text-figs. 12 and 13).

In connection with the genus *Pelmatorycter*, Hewitt states (Ann. Durb. Mus. vol. i, pt. 3, p. 223) that "the character of the position of the posterior sternal sigilla is only of specific importance, for in the genus *Pelmatorycter* these sigilla may be small and submarginal, or very large and submedian." This may perhaps be because specimens of the genus *Ancylotrypa* have been included as *Pelmatorycter*. In specimens of both genera available for examination great similarity exists, and the posterior sternal sigilla show less divergence than in

other genera discussed; yet, taking sigilla as the criterion, two distinct classes can be distinguished, to each of which a generic name had previously been given on other and less reliable characters.

*Ancylotrypa*.—Posterior sternal sigilla oval, marginal to submedian; and their distance apart always exceeds the width of the labium, and is also much greater than their long diameter. The distance between their inner anterior margins greatly exceeds the distance from the latter to the margin of the sternum.

*Pelmatorycter*.—Posterior sternal sigilla large, oval or pear-shaped,

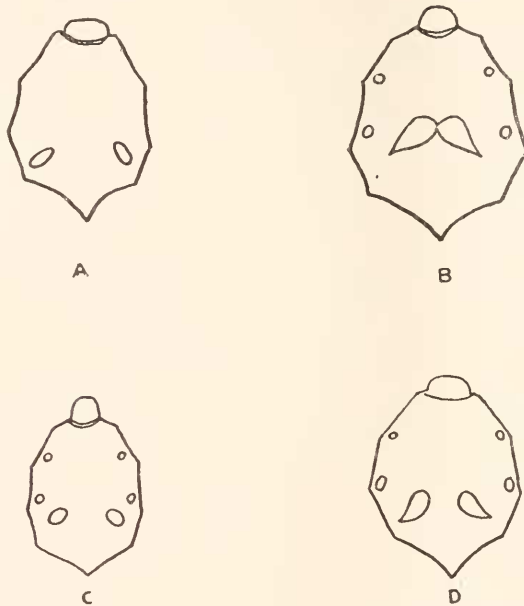


FIG. 12.—A. *Ancylotrypa cornuta* ♂. B. *Pelmatorycter namaquensis* ♂.  
C. *A. pusilla* ♂. D. *P. pallidipes* ♂.

and median to submedian in position; the distance apart usually less than, and rarely equal to, the width of the labium, and also seldom exceeding the long diameter of the sigilla. The distance between the inner anterior margins is considerably less than from the latter to the margin of the sternum.

In both genera the 2 anterior pairs of sigilla are small, less distinct, and marginal; in *Pelmatorycter* the 2nd pair are submarginal.

The characters given in the original generic descriptions are not of primary importance, the dentition of the tarsal claws being especially variable; the eyes, however, are of some importance, since in *Ancylo-*



*trypa* the ocular area is scarcely wider posteriorly than anteriorly, is shorter in comparison with the width, and has the posterior row of eyes smaller and more subequal in size than *Pelmatorycter*; the latter also has the posterior tarsi of the ♀♀ more heavily spined on the under surface. Further, *Ancylotrypa* are considerably smaller and slenderer in build, and the ♂♂ have shorter palps, and the ♀♀ more oblong (or cylindrical) abdomens than in *Pelmatorycter*.

Thus among Hewitt's recent additions (Ann. Transv. Mus. vol. v, No. 3, p. 192, etc.) to the genus *Pelmatorycter*, are forms such as *P. parvus* and *P. brevipalpis*, etc., which from the descriptions appear to belong to *Ancylotrypa*; further, a ♀ specimen depicted in fig. 10, pl. XXVI, and referred to as a species near *brevipalpis*, possesses the characteristic size and shape of *Ancylotrypa*, and would no doubt possess the sternal characters also.

Not only in *Pelmatorycter* and *Ancylotrypa*, but in the preceding and other genera, sternal sigilla appear to be a sufficient generic distinction. When one considers that these sigilla are the marks formed by attachments of the powerful internal thoracic muscles which actuate the legs, their significance is not inconsiderable. A difference in position and size of the posterior sternal sigilla, as shown by *Gorgyrella* and *Segregara* (Text-fig. 11), can only mean a difference in arrangement and action of the thoracic musculature which makes the two forms entirely separate. In the above case both are ground-trapdoor-tube builders, and are also alike in external appearance. It is generally admitted that genera arise in evolution by branching off from a common stock, and therefore intermediate forms are at times only to be expected. Although the posterior sternal sigilla of *Gorgyrella* are equivalent to the corresponding ones of *Segregara*, and have probably been formed by the enlargement and forward migration of the posterior sternal muscles of a *Segregara*-like stock, it seems quite legitimate to consider that branch generically distinct. The supposition of the development of *Gorgyrella* from a *Segregara*-like form seems borne out by the young examples of *Gorgyrella*, in which the posterior sigilla bear more resemblance in conformation and size to those of some adult forms of *Segregara*, whilst the adult forms do not. In all specimens of *Gorgyrella* examined the muscle attachments are as in Text-fig. 11 B, and though some may perhaps be smaller and slightly further apart posteriorly or *vice versa*, the arrangement is invariably characteristic and distinct. A parallel case to this is furnished by *Homostola* and *Spiroctenus*; Hewitt considers that *Homostola zebrina* is "an aberrant *Spiroctenus* standing somewhat isolated in the genus owing to the large size and close approximation

of the posterior sternal sigilla" (Ann. Durb. Mus. vol. i, pt. 3, p. 233). Fig. 13 shows the characters under consideration, and though no doubt the one form can be considered as arising from the other by a muscular alteration and migration as in *Gorgyrella*, the difference thus brought about is surely generic. No doubt, as Hewitt says, the characters by which Simon separates the *Cyrtachenieæ* from the *Nemesieæ* are not very clear and definite; and further knowledge will perhaps bring about rearrangements there and elsewhere. Never-

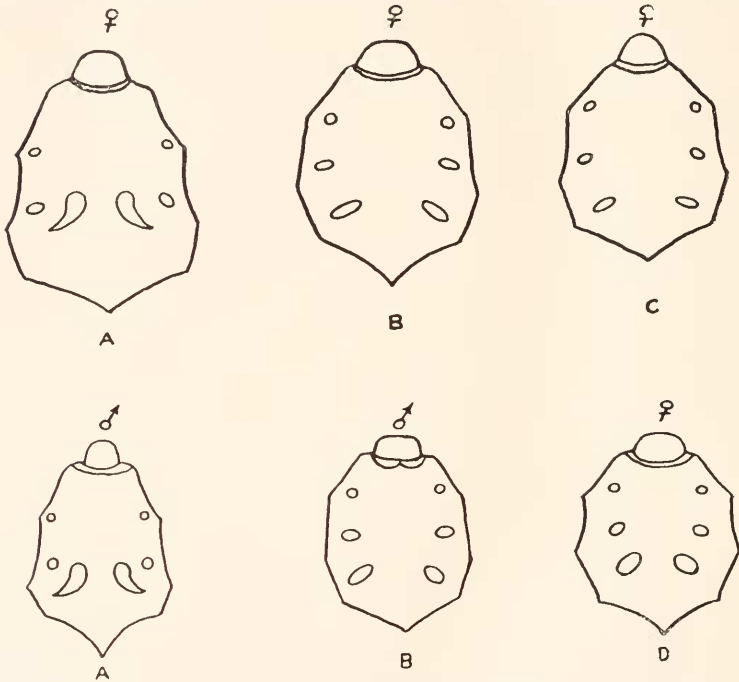


FIG. 13.—*Homostola zebrina*. B. *Spiroctenus validus*. C. *Spiroctenus schreineri*. D. *Stictogaster reticulatus*.

theless, though *Homostola* should preferably be in the same group as *Spiroctenus*, the two seem generically separate. *Stictogaster* (Text-fig. 13 D), contains but the one species on which the genus was founded, and is allied to, but distinct from, *Spiroctenus*; further material and the discovery of the ♂♂ of the specimens is necessary to decide whether the generic characters are constant and valid; in the meantime, there is no advantage in calling it *Spiroctenus*. Hewitt apparently considers that as extreme members of one genus may resemble the opposite extreme members of another genus, that

the whole form one series with the sigilla as a specific character only; but the difficulty of placing a form such as *Gorgyrella* in the same genus as one such as *Segregara* seems greater than that of separating such forms as constitute the so-called intermediate forms. Both Simon and Purcell considered the character, when strongly shown as above, to be more than specific, and so far as I am able to see, that view is correct.

The *Otenizidae* are not alone in having muscle-scars or sigilla as a generic character; in the *Eresidae*, for example, the two genera *Eresus* and *Dresserus*, of which the ♀ ♀ greatly resemble each other, can be separated at a glance owing to the dorsal abdominal sigilla. The two anterior pairs of muscle attachments are close together in *Dresserus* and separate in *Eresus*; in addition *Dresserus* is distinct in having 4 small cribellal plates instead of 2 large ones. The point, however, is that the character, though scarcely so important as the differences which exist in the *Otenizidae*, is nevertheless of generic significance; so that it seems justifiable to consider that, although the genera of 4-lunged terricolous spiders of South Africa will perhaps have to be re-grouped and in some cases merged, the relegation of sternal sigilla to a merely specific character in order to simplify matters, is not sound.

It is quite possible that sternal sigilla will afford a means of tracing the generic development of such groups as the *Idiopeae*. As far as can be seen, from out of the cross identification and synonymy of the past, the fact emerges that *Idiops* exists in Africa and South America (as well as in Central Asia, Syria, Arabia, India, and Burma) and includes as synonyms the majority of species described under *Acanthodon*. Further in this group occurs the genus *Gorgyrella*, found only in South Africa; *Heligomerus*, found in Tropical Africa, India, and Ceylon, and finally *Segregara*, proposed for forms as previously defined. Now Pocock, writing on the geographical distribution of the *Otenizidae* (P.Z.S. 1903, pp. 351 and 357), considers that *Idiops* reached South America, not from North America, but from Africa. This and the general geographical distribution of the *Idiopeae* indicate that Tropical Africa was the seat of origin of the group. The probability is that the original stock was akin to *Segregara*, and that the latter genus is a direct but numerically feeble continuation of it. From this a branch occurred, in which muscular alteration and migration took place, giving forms (c) and (d) Text-fig. 11; this form, now known as *Idiops*, spread far and wide, and eventually reached South America, where it still exists, and has given rise to a specialised offshoot, *Pseudidiops*; in view of its success in establishing itself and its

consequent numerical preponderance, a fair range of variation is only to be expected; hence the name *Ctenolophus* was applied to what is most probably only a section (confined perhaps to South Africa) of the genus, whilst the original erroneous formation of the genus *Acanthodon* was responsible for much confusion and cross identification. Finally *Gorgyrella* can also be regarded as an offshoot from form (A), and is important in that it lends support to the theory of the South African origin of the *Idiopeae* in that it is found in South Africa alone; whilst in the resemblance of its young to the adult forms of *Segregara*, it indicates a former connection therewith. *Heligomerus*, the other representative of the group, diverged on the same lines as *Idiops*, and is found in Tropical Africa, Ceylon, and India, but evidently did not succeed in establishing itself as did *Idiops*.

The occurrence also of the genus *Diplothele* (p. 118) in Africa, as well as Madagascar and India, is interesting, since the group is akin to the *Idiopeae* in eye formation, and to *Segregara* in sternal sigilla, and may eventually prove to be connected with the group in origin, in Tropical Africa.

It follows then that the species placed under *Acanthodon* in Hewitt's table (Ann. Transv. Mus. vol. 5, No. 3, p. 87) will have to be separated as follows:

*A. spiricola*, *kolbei*, and *kentanicus* come under *Idiops*, section one row of teeth on inner side only of cheliceral groove, and formerly known as *Ctenolophus*. *A. namaquensis* and *A. schreineri* are as Purcell named them, *Gorgyrella namaquensis* and *schreineri*.

*A. abrahami* and *A. transvaalensis* become *Segregara abrahami* and *transvaalensis*, as apparently do *monticola* and *grandis* also; for the others an examination of the specimens is necessary to decide under which genus they should be placed.

#### SEGREGARA TRANSVAALENSIS (Ht.).

*Specimens*.—A subadult ♀ (No. 150,502) from Warmbaths, Transvaal, collected by Dr. W. F. Purcell, 9/05. The specimen differs very slightly from the description of *transvaalensis* in the number and arrangement of the spines, and is smaller in size; the sternal sigilla, however, though faint in appearance, are as in form (A) and are characteristic of *Segregara*.

#### SEGREGARA ABRAHAMI (Ht.).

*Specimens*.—One ♀ (No. B 78) from Burghersdorp, Albert Div., collected by Dr. Kannemeyer, 10/07. This example is smaller than

the Alicedale specimen of *abrahami*, but is not specifically different, though the spination is occasionally slightly weaker. The three small pairs of sternal sigilla are as in Text-fig. 11 (A).

GEN. GORGYRELLA, Purc.

(See pp. 125-128.)

GORGYRELLA INERMIS, n. sp.

*Specimens*.—One ♀ (No. B 1625, Type) from Cradock (Mrs. W. F. Purcell, 10/05).

*Colour*.—Similar to *namaquensis* and *schreineri*.

*Carapace*.—Equal in length to patella, tibia, and  $\frac{2}{3}$ - $\frac{3}{4}$  metatarsus of the 1st leg, and just exceeds the tibia and metatarsus of the 4th leg.

*Ocular area*.—Length subequal to the width; latter slightly less than the length of metatarsus I. Anterior eyes (seen from in front) are nearly  $\frac{1}{2}$  a diameter apart; anterior medians a diameter apart; area formed by anterior eyes scarcely wider behind than in front. Posterior medians small, but do not occupy a greater width than the anterior medians, from which they are separated by about their own diameter; posterior laterals less than their own long diameter from the posterior medians, and form with them a strongly procurved line.

*Sternum*.—Very slightly longer than broad (greatest breadth opposite 3rd pair of legs). Sternal sigilla characteristic of the genus; posterior pair about  $1\frac{1}{4}$  diameters apart and very close to the median pair, being in fact opposite the bases of the 2nd pair of coxae; median pair small and slightly lower than the border of the 2nd coxae, and about 4 times their own diameter from the margin; anterior pair subequal to the medians, opposite the bases of the 1st pair of coxae, and at least twice their own diameter from the margin.

*Pedipalps*.—As in *namaquensis*.

*Legs*.—Coxae with no spinules or spiniform setae on posterior borders; coxa III with a band of longer, denser hairs posteriorly; I, II, and IV with normal clothing of long hairs. Tibia of 1st leg as long as metatarsus and  $\frac{1}{2}$  the tarsus.

*Spines*.—Much as in *namaquensis*; metatarsus IV with 8-9 strong spines on anterior under surface; tibia IV has no spinules on anterior surface, but 4-5 long spiniform setae on the under surface; band of spinules on patella IV reaches only half-way along anterior surface. Metatarsus III with 2 spines on anterior under surface. Distal edge of patella III with 3 spinules on inner side and 4 on outer; latter

followed by a band of 12-14 stout spinules which reach to the base of outer or anterior surface.

*Labium* with 8-9 denticles anteriorly.

*Chelicerae*.—Inner curve of fang with the usual serration; groove with 5 strong teeth on the inner border and 3 smaller ones posteriorly on the outer border.

*Genital operculum*.—Covered with hairs down to the lower lip, and apparently with no striae on its surface.

*Measurements*.—Total length 20.5 mm.; carapace 6.5 mm. long and 5.9 mm. wide; sternum 4 mm. long; length of tibia of 1st leg 2.6 mm.

#### NOTES.

##### POECILOMIGAS ABRAHAMI, O. P. Cbr.

Since writing the foregoing notes, p. 84, the Rev. Nendick Abraham has supplied me with further information, based on his own observations, on the above paired discs. Their presence on the lids of the trap-door retreats was pure chance, since they are constructed by larvae (imago not known) which live in the band connecting the two discs. This band is tubular, and has a flap or door at each end. The grub issues at either door and feeds on the lichen, etc. covered by the disc above: when that is finished it transfers its attention to the area covered by the other disc, and thus feeds concealed from possible enemies, and with a safe retreat in the tube if a bird should turn the discs over. When these two pastures are exhausted, it transfers its dwelling-place to another region, and it was thus quite by chance that the discs happened to fit over the trap-door lids. The Rev. Abraham has not succeeded in rearing any of the larvae to maturity, but the above note may serve to guide others to secure further information.

##### HOMOSTOLA ZEBRINA, Purc. (p. 97).

Since going to press a further paper by Hewitt (Ann. Transv. Mus. vol. v, pt. 3, p. 203) provides fresh localities and a diagram of the palp of the ♂ of specimens, which the author refers to *Spiroctenus* (*Homostola*) *zebrina*; I have since examined Hewitt's specimens, both ♂♂ and ♀♀, and consider them to be true *Homostola*, sp. *zebrina*, and can hardly agree that they are *Spiroctenidae*, though the two genera have much in common. The relative sizes and positions of the sternal sigilla (see Text-fig. 13, and note on sternal sigilla, p. 129) are a clear and definite distinction, apart from the dentition of the chelicera and scopulation of metatarsi, etc.



## INDEX.

A	PAGE	L	PAGE
abrahami (Poecilomigas) . . . . .	83, 136	latus (Moggridgea) . . . . .	81
abrahami (Segregara) . . . . .	134		
<i>Acanthodon</i> . . . . .	92, 126	M	
Ancylotrypa . . . . .	94	MIGIDAE . . . . .	79
arcturus (Diplothele) . . . . .	118	Moggridgea . . . . .	79
australis (Thelechoris) . . . . .	120	N	
B		nanus (Stasimopus) . . . . .	87
bicolor (Hermacha) . . . . .	107	nigra (Hermacha) . . . . .	110
brevipalpis (Stasimopus) . . . . .	85	nigrispinosus (Hermacha) . . . . .	112
broomi (Spiroctenus) . . . . .	101	P	
C		palapyi (Idiops) . . . . .	90
cambierae (Spiroctenus) . . . . .	98	Pelmatorycter . . . . .	129
collinus (Spiroctenus) . . . . .	99	peringueyi (Moggridgea) . . . . .	80
<i>Ctenolophus</i> . . . . .	92	pilosus (Spiroctenus) . . . . .	102
CTENIZIDAE . . . . .	84, 125	Pionothele . . . . .	117
curvipes (Hermacha) . . . . .	106	Poecilomigas . . . . .	83
D		pullus (Idiops) . . . . .	88
Diplothele . . . . .	118	purcelli (Hermacha) . . . . .	114
DIPLOTHELEAE . . . . .	118	purcelli (Spiroctenus) . . . . .	105
DIPLURIDAE . . . . .	119	purcelli (Stasimopus) . . . . .	84
F		pusilla (Ancylotrypa) . . . . .	94
fulvus (Hermacha) . . . . .	109	Q	
G		quercina (Moggridgea) . . . . .	79
gooldi (Spiroctenus) . . . . .	104	S	
Gorgyrella . . . . .	135	Segregara . . . . .	125
gracilis (Ischnothele) . . . . .	123	spinosa (Ancylotrypa) . . . . .	96
H		Spiroctenus . . . . .	98
Homostola . . . . .	97	Stasimopus . . . . .	84
Hermacha . . . . .	106	Stictogaster . . . . .	132
I		straminea (Pionothele) . . . . .	117
Idiops . . . . .	88	T	
inermis (Gorgyrella) . . . . .	135	terricola (Moggridgea) . . . . .	82
Ischnothele . . . . .	123	Thelechoris . . . . .	119
K		transvaalensis (Segregara) . . . . .	134
kentanicus (Idiops) . . . . .	92	V	
kentanicus (Stasimopus) . . . . .	85	validus (Spiroctenus) . . . . .	103
		Z	
		zebrina (Homostola) . . . . .	97, 136



EXPLANATION OF PLATE IX.

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FIG.

- 1.—*Stasimopus purcelli*, n. sp. Left palp, outer and under aspect.
- 2.—*Stasimopus kentanicus*, Purc. Left palp, outer and under aspect.
- 3.—*Spiroctenus cambieræ*, Purc. A and B. Under and side view of palp. C. Tibia and metatarsus of right hand, first leg, inner side.
- 4.—*Spiroctenus collinus*, Poc. Left palp, (A) from below, (B) from the side. C. Showing different aspect due to torsion. D. Tibia and metatarsus of first leg, under aspect.
- 5.—*Spiroctenus validus*, Purc. Left palp, (A) from below, (B) from side. C. Type specimen from side. D. Tibia and metatarsus, first leg.
- 6.—*Spiroctenus purcelli*, n. sp. Left palp, (A) from below, (B) from side. C. Tibia and metatarsus of leg, under surface.

